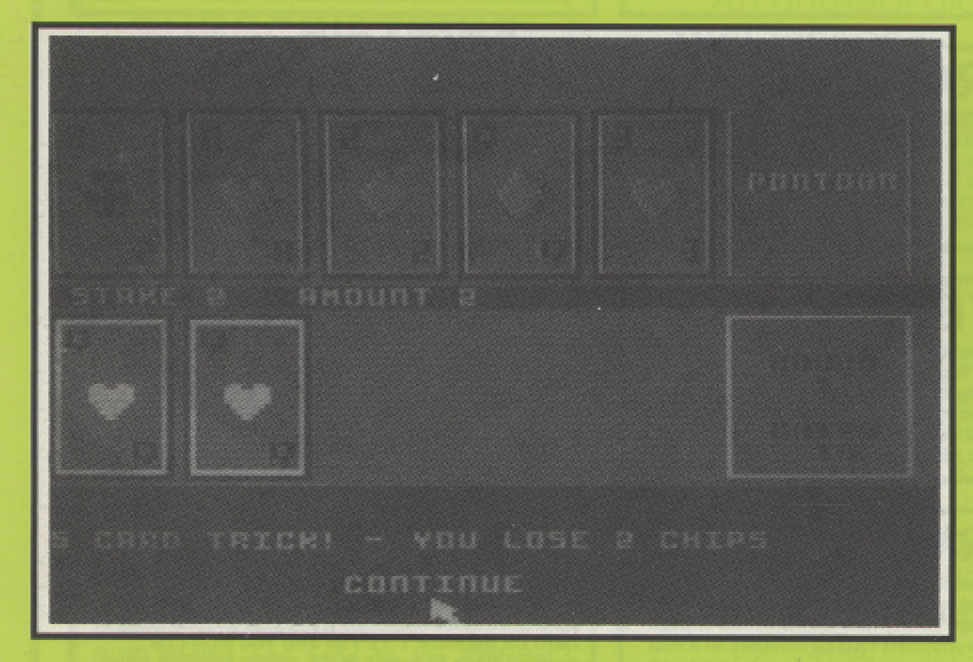
Page 6 Publishing's

NEW ATARI USER

The Resource for the ATARI CLASSIC and the ATARI ST

Issue 65 December/January 1993



FOR THE ATARI CLASSIC

A NEW MAPPING THE ATARI?
Extracts from a forthcoming book

TOKENISED BASIC
A utility to explore the inner workings of Basic

DIRECTORY HEADER
Add a professional touch to your disks

BUILD YOUR OWN WRITE PROTECT SWITCH

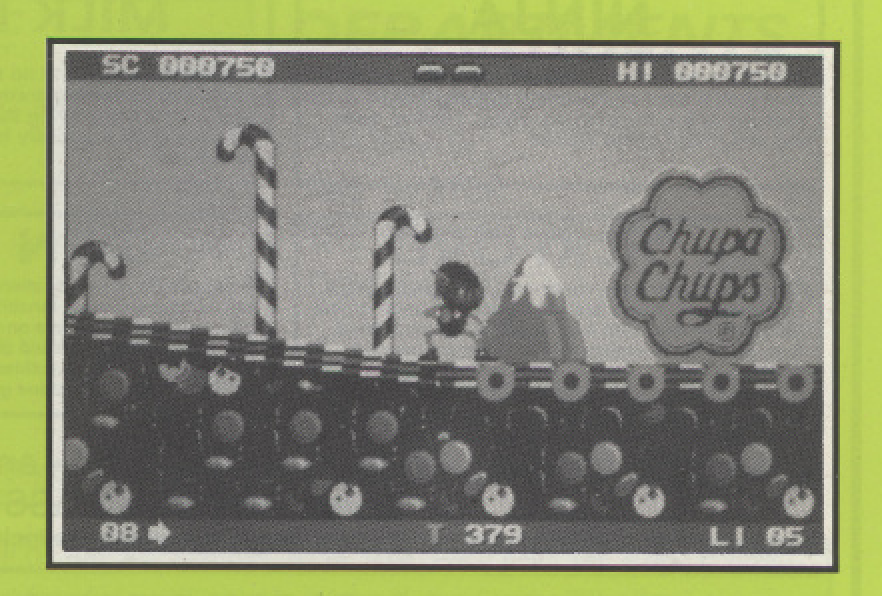
PLAYER MISSILE GRAPHICS

PONTOON
a neat version of this classic game for you to type in

FOR THE ATARI ST

TRANSFERRING FROM THE ST TO THE XL/XE AND BACK

ZOOL
Seems to be the game of the year!



PLUS ... MAZE PRINT ... LITTLE MEXICAN ... MINI TURBOS ... TOUCH TYPING DRILLS ... TURBO LOAD TAPES and loads more

REGULAR CASSETTE BARGAINS FROM PAGE 6

You know that these cassettes can work out at only 95p each but now you have OVER 40 TO CHOOSE FROM - check the Accessory Shop pages in this issue and mix 'n' match from this page and the price can be as low as 95p each!

FREE - MASTER CHESS *when you order 3 or more cassettes*

TRANSMUTER
A new kind of weapon. This sci-fi arcade game features excellent smooth scrolling, incredible terrain, vector graphics sections and subterranean caverns. Fast reactions and a cool nerve are a necessity. Music by David Whittaker

PROTECTOR
Assigned to Fort Rucker, the US Army Helicopter Training School based in the Nevada desert, your aim is to become the best chopper pilot this side of the Iron curtain. A real Protector! Your mission consists of a strategic battle of wits between yourself and either another pilot or a computer controlled RPV

REVENGE II
The Mutated 90 foot high, laser spitting death camels have rebelled against their captors the Zzyaxians and are out for revenge! All action, highly graphical shoot-em-up from Jeff Minter

KIKSTART
The ultimate off-road motorbike scramble simulator. Guide your rider carefully over the obstacles in this all action simulator for 1 player against the computer or 2 players against each other as well as the clock

ROGUE
You are the ROGUE. Your mission is to search the Dungeons of Doom for the Amulet of Yendor. In the dungeons you will find many things to aid the quest for the Amulet. You will also encounter fearsome monsters and fiendish traps that will challenge all your skills

DESPATCH RIDER
Join the growing band of street demons - those fearless horders who terrify the population of the big cities to get the parcels through. Plan your moves to make some money, but don't take too long - time is always short. Gain an instant macho rating and be a despatch rider with this all action simulation

180
What can we say? A great darts challenge. Eight opponents, digitised speech, two player option. live joystick control, full matchplay scoring, a sense of humour, superb playability, this one has it all!

UNIVERSAL HERO
Only seven seconds left to save the planet! Universal Hero has to save his skin and everybody else's by finding bits to repair a shuttle to get to a planet to pick up the spares to mend a space freighter which is out of control and about to blow him and his chances of getting back to earth to atoms.

INVASION
Mobilize your units and prepare for battle. This all action space conflict requires skill, strategy and tactics. You must destroy the weather control station in order to win the battle but every move you make the enemy will counter, and they're waiting for you to make just one fatal slip up

SIDEWINDER II
It is 27 years since the final battle of the war with the aliens. 27 years of peace have reigned in the Western Spiral Arm of the Galaxy. All this is about to change. Step aboard your craft and prepare to defend mankind in this all action space blast

HENRY'S HOUSE
Little Henry has shrunk. He must navigate his way through the royal household to find the cure. Avoiding all the obstacles in his path, from terrible toothbrushes, through pestiferous parrots and chefs chasing chickens, to a final encounter with the vicious vampire! Acknowledged by all reviewers as one of the best Atari games of all time

LOS ANGELES SWAT
Special Assignment. Rescue the hostages from the terrorist gangs holding out in West L.A. Clean up the streets. Blow away the bad guys and be a hero on network T.V.! Fail and you won't be coming back to watch it. All action joystick bending combat for those with the skill to survive!

GHOSTBUSTERS
Has anybody seen a ghost? Matter of fact yes they have! At this very moment hundreds of ghosts are making their way to the infamous spook central. Only you can save the world from a disaster of biblical proportions. So go and show 'em how you do it!

BOMB FUSION
A terrorist gang has planted bombs throughout the Sellerscale Nuclear Processing Plant and you, as ex super hero (ex after the 'Boris Affair') have to go in and save the plant and possibly the Northern Hemisphere from destruction

SPEED ZONE
Enter the Speedzone in a frantic defence against marauding alien forces. A survey ship sent into the area comes under attack. As an enemy vessel draws closer your "STARFIRE" class attack craft is launched

NINJA
Blasts the belt off all other martial arts games! That's all it says on the inlay! Someone sure reckons this is the best punching, kicking, ducking and diving game around

MILK RACE
Cycling 1,000 miles is no mean feat - and you could end up feeling pretty exhausted by the time you've finished playing this superb race simulation designed especially in conjunction with the Milk Race

FEUD
To win at Feud you must "out-spell" your rival Wizard Leanoric. In Kieke's herb garden you will find the ingredients for your spells but tread carefully as strange things can happen in this game of magic and mystery

ROCKFORD
The only true arcade version of the classic game Boulderdash. There are four levels on each of five different worlds with four screens on each level. It all adds up to eighty totally different playing screens.
INCLUDES FREE GAME - CRYSTAL RAIDER

GUN LAW
Four months of bloody alien attacks have taken their toll - all the surviving inhabitants have fled and arson attacks have been made on your weapon stores, they destroyed what you could not carry away. You are left to fight alone against ruthless and bloodthirsty killers with just a single machine gun

PANTHER
Save the last humans on Xenon before the alien hordes turn them into Sunday roast! Take your ground attack ship through this 3D scrolling mega shoot-em-up with great graphics and unbelievable soundtrack

Any one cassette £1.95 - any two £3.50 - any three £5.00 - any 4 £6.50 - any five £7.50 or select ANY TEN CASSETTES FOR JUST £9.50!

All prices are inclusive of postage

CHECK THE ACCESSORY SHOP PAGES FOR MANY MORE BARGAINS

USE THE ORDER FORM ENCLOSED OR PHONE YOUR ORDER TO PAGE 6 AT 0785 213928

'The magazine for the Dedicated Atari User'

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Issue 65 - December/January 1993/4



You know what I'm gonna say!

SUBSCRIPTIONS

Annual subscription rates (6 issues)

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Elsewhere (Surface)	£17.00
Elsewhere (Air Mail)	£23.00

Overseas rates reflect only the difference in postal costs

NEW ATARI USER ON DISK

A disk containing all of the 8-bit programs from each issue of NEW ATARI USER is available either separately or on subcription. Single price £2.95 per disk, Subscription rates (6 issues)

UK	£25.00
Europe	£32.00
Elsewhere (sea)	£32.00
Elsewhere (Air)	£42.00

Please make cheques payable to PAGE 6 PUBLISHING and send to the Editorial address shown below

SUBMISSIONS

PAGE 6 welcomes and encourages its readers to submit, articles, programs and reviews for publication. Programs must be submitted on disk or cassette, articles should wherever possible be submitted as text files on disk. We seek to encourage your participation and do not have strict rules for submissions. If something interests you, write a program or article and submit it!

The next issue of NEW ATARI USER will be on sale 31st January
Editorial copy date is 18th December

PROGRAMS

FEATURES

REVIEWS

ST FILE

DEPARTMENTS

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PAGE 6 PUBLISHING's
NEW
ATARI
USER

Issue 65
December/January 1993/4
'The Magazine for the Dedicated Atari User'
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THE CREDITS

All of the usual stuff is on page 3 but here are the people who made this issue possible.

Les Ellingham is amazed at having survived another year at probably the most depressing time for all of us in many ways. The recovery that only the politicians with guide dogs can see might come along next year but will life ever be the same as we have enjoyed it in past times?

Sandy is amazed that none of the wolves actually made it through the door (well, only one or two did!)

Paulette is amazed that she still has a job but she deserves to have one for sticking with it

Everyone is amazed that Atari are still around after all the effort they put into trying to become the world's least prominent computer manufacturer

The Regular Contributors, who provide the backbone of the magazine and can generally be relied upon to come up with good articles and reviews, are ....

John S Davison
Paul Rixon
Allan J. Palmer
The Tipster
Stuart Murray
Ian Finlayson
Nic Bavington

All other contributors for this issue are individually credited alongside their articles or programs. Thanks to everybody for sharing their enthusiasm with other Atari users.

Did any of you see the article I wrote for ST REVIEW about the Atari Classics? Well, at least one person wrote in with congratulations on the article and on the proceeds I was able to invest in a modest few new CD's. From the long list I chose CLANNAD's BANBA and OUR TIME IN EDEN from 10,000 MANIACS. After a long time of anticipation both were a little disappointing, nothing really wrong with them, just more of the same. As new opportunities seldom come nowadays I thought I would take a chance on something different and picked MARY CHAPIN CARPENTER's 1990 album Shooting Straight in the Dark. Brilliant! She is someone who I have been tempted by over the years but have always backed away from. Obviously I had only heard the 'throwaway' tracks before but the really good ones are out and out classics. Excellent stuff that has been played almost continuously as this issue has come together (it's on the phones now!). Trouble is she has two more out so that adds to the long, long list. Still, for the first time I have got a long Christmas list. Let me now if anyone wants a copy!

The next issue of NEW ATARI USER could feature YOUR article or program, so SEND IT IN NOW!

PAGE 6 shows just what you can do with your Atari. NEW ATARI USER has always been created entirely with Atari equipment, initially on the XL but more lately with a Mega ST and other stuff, who needs PC's or Macs! With the exception of the final output on a Linotron and the use of an in-house repro camera for the photos and listings everything is done on the ST. Hardware includes a Mega ST2 (upgraded to 4Mb), SM125 Monitor, Supra 30Mb Hard Disk, an Atari Laser Printer, Citizen 124D printer, Philips CM8833 monitor, 130XE, XF551 disk drive, 810 disk drive, 850 interface, NEC 8023 printer. Principal software used is Protext and Fleet Street Publisher 3.0. Other software includes Kermit, Tari-Talk, Turbo Basic and various custom written programs on the XL/XE. Articles and programs submitted on XL/XE disks are subjected to various custom written programs before being transferred across to the ST via TARITALK. All major editing is done with Protext and pages are laid out with Fleet Street Publisher. A disk with the finished pages as Postscript files is sent to a typesetting bureau to be output on a Linotron and, hey presto, finished pages are sent back exactly as you see them. It really does work! All that is left is to drop in the listings and photos.
Well, it's not quite as easy as that but you get the idea!

Editorial

As I was putting this issue together I came to Allan Palmer's latest Mailbag and was amazed to see that this issue complete's his first year as Mailbag editor. Another year draws to a close and we still seem to have a great deal to say about the Atari Classics.

Every time I do an issue nowadays I start to worry that there might not be enough to fill the pages but each time there has been plenty and the quality does not seem to have diminished. In fact, as I look at the final draft of this one I am astonished at just how good it is after all these years. Of course, the credit goes to all of the dedicated readers who have stuck with their chosen hobby and have been motivated to share it with others and the folks who have written regularly for us for a number of years. The mainstay of the magazine for all those years has been the 'regular' contributors who have turned in many fine reviews and articles time after time and I must thank them, on your behalf, for another fine year's work and support.

POLITICS!

For many of us this past year has been one of the worst of all time with job security evaporating and hopes of better times raised and dashed by a government that really has little idea of what to do to change the situation. By the time you read this the Budget will have come and gone and thousands of folks will know whether they can look forward to struggling through yet another year. If there are changes in VAT, as looks likely, then you can be sure that everybody will be hit. If VAT goes on newspapers, books and magazines then those who can't afford it will be hit the hardest. If you are out of work you might buy a paper every day just to look for a job. If you are on income support then you might put a bit aside to get the kids some comics. You might even consider that books and magazines are more essential for your children's education than computer games and rightly so. Whatever, you will have to pay extra whether you are rich or poor. Of course a tiny increase in income tax would have the same benefit to the exchequer and would affect only those who pay tax, those who have a greater choice in what they can buy, but this government has made its pledge to reduce income tax even if it means that many people who are trying hard to become tax payers are put out of business and on the dole. It is a good job that the government doesn't design computer games. Can you imagine it? All the games would be the same, there would only be one way of playing with no variation, it wouldn't matter how many of the goodies died along the way and you would play for years and years not knowing exactly what you were trying to achieve. You wouldn't buy those games would you?

Sorry to waffle on like this but, for the very first time in my life, I am getting annoyed at what is going on in the world outside.

SEASONS GREETINGS AND ALL THAT

Let's forget all the doom and gloom and celebrate what we have achieved. Page 6 is ten years along the road and determined to keep going. Many of you have been with us for many years and are still as keen as ever. So let us end this year on a high note and give thanks for past and future successes.

I wish everyone reading this a very Happy Christmas and an interesting and fulfilling New Year. Oh, that I could have said a Prosperous New Year, but let's not set our sights too high.

Les Ellingham

TO 1994 - THE YEAR OF COMMITMENT TO YOUR ATARI

TURBO TAPE

Checking out Micro Discount's Turbo Tape Deck

If you were reading New Atari User when it was published under the title of Page 6 Magazine then you may well recall advertisements from a company called Rambit. Among several products they advertised a tape deck conversion kit that enabled cassettes to be loaded at super fast speeds, but the main drawback was that you had to be handy with a few tools in order to convert your own recorder and it was not exactly easy to convert your tapes. Now, Micro discount have resurrected the Rambit device and can supply XC12 cassette decks ready to run at turbo speed together with a good selection of commercial games ready to load in high speed format.

THE TURBO RECORDER

If you already have a cassette recorder and are handy with a soldering iron then you can purchase a Turbo kit and install it yourself but the majority of users will be happier to purchase a ready converted unit.

The XC12 TURBO RECORDER from Micro Discount costs £43.00 plus £2.50 postage and only needs to be plugged into your computer. It will load all standard tapes as well as the High Speed format so that you have no worries regarding your existing software collection. All your present tapes will load but only at the usual speed. If you want to take advantage of the High Speed facilities then you will either have to convert your tapes or buy ready to run High Speed tapes from Micro Discount or Tiger Developments. Several games and utilities are already available.

HOW DOES IT WORK?

A High Speed tape has a special header that loads the Rambit program at normal speed taking about 25 seconds and six 'beeps'. From there on the program blasts into memory at the highest speed obtainable and the loading times are reduced by astonishing amounts as detailed in the table alongside. The load process is silent with the usual loading sound replaced by on-screen information consisting of a line at the top of the screen indicating how many bytes have been loaded into memory and a screenful of garbage showing the information being loaded. I have no idea why this is necessary as it only serves to make the process look quite amateurish, as if the programmer couldn't figure out how to shut off the screen. The status information at the top is quite adequate to show that the load is progressing properly. Still it doesn't inhibit the loading and average load times are so short that it won't bother you too much.

ADVANTAGES

As far as games go, the loading times are improved so much that you are likely to play your favourite games much more often and you will wonder how you ever had the patience to load the games before, but the Turbo Recorder also opens up the possibilities of using more serious programs like word processors.

Micro Discount sell a High Speed Word Processor on cassette which is actually AtariWriter. Now, cassette based word processors have been available before but they suffered the major disadvantage of taking ages to load and then ages to save and load any documents you have created. The High Speed Turbo format means that, at last, word processing becomes practical on a cassette based system. This version of AtariWriter loads in 1 minute 46 seconds and will save and load in high speed. The manual is on the reverse of the tape and comes in four parts with the total comprising 27 pages when printed out. The first part of the manual takes just 55 seconds to load, less time than it takes to print it out! On a standard recorder this might take up to 10 minutes to load making any word processing session a long, drawn out, affair.

Other serious programs available include PRINT LAB, a DTP style program for the 1029 printer, an excellent drawing package called PAINTBOARD and also TURBO BASIC on cassette (complete with a photocopy of the manual that Page 6 put together! Ah, well!).

TURBO LOAD TIME COMPARISONS

	STANDARD LOAD	TURBO LOAD
ARCADE FRUIT MACHINE	9 min. 7 secs	1 min. 34 secs
AMAUROTE	15 min. 5 secs	2 min. 21 secs
BLINKYS SCARY SCHOOL	15 min. 10 secs	2 min. 17 secs
CAVERNIA	12 min. 5 secs	1 min. 15 secs
FEUD	18 min. 25 secs	2 min. 28 secs
GHOSTBUSTERS	14 min. 40 secs	1 min. 50 secs
HENRYS HOUSE	12 min. 5 secs	1 min. 15 secs
JOCKY WILSON'S DARTS	15 min. 26 secs	2 min. 16 secs
LAS VEGAS CASINO	15 min. 12 secs	2 min. 17 secs
MIRAX FORCE	14 min. 50 secs	1 min. 50 secs
MOUNTAIN BIKE RACER	15 min. 9 secs	2 min. 27 secs
NINJA COMMANDO	15 min. 36 secs	1 min. 45 secs
STACK UP	8 min. 31 secs	50 secs
SIDEWINDER II	10 min. 43 secs	60 secs
L.A. SWAT	10 min. 5 secs	60 secs
THE LAST GUARDIAN	14 min. 5 secs	1 min. 12 secs
TAGALON	13 min. 5 secs	1 min. 6 secs
TIGER ATTACK	12 min. 16 secs	1 min. 27 secs
TITAN	16 min. 13 secs	1 min. 46 secs
ZYBEX	16 min. 35 secs	1 min. 50 secs

WANT TO BUY ONE?

If you don't have a cassette deck at present then I can see no reason for buying a standard deck when for about £10 extra you could have the XC12 Turbo Recorder. All standard tapes will run and you have the opportunity of purchasing high speed format tapes. These work out a little more expensive at around £4.50 each but are well worth it. Spend your time playing games rather than listening to them load!

If you already have a cassette deck then you could convert it yourself, and we hope to cover the conversion procedure in a future article, but you might prefer to sell it on and buy the XC12 Turbo recorder. It is, without doubt, the next best thing to having a disk drive.

Les Ellingham

Mailbag

Well, the time to compile another column has come round again, so it's time to boot up PaperClip and sift through the post that has been forwarded from Ellingham Towers in Stafford.

Allan J Palmer

Allan J Palmer sits in the hot seat at the sorting office awaiting your letters on all things Atari - get writing!

Write to MAILBAG at Page 6 Publishing, P.O. Box 54, Stafford, ST16 1DR

PRINTER SOLUTION 1

In issue 64, Simon Taylor asked for assistance in using a Commodore MPS1230 printer with his Atari 65XE. Faster than a speeding bullet, Tony Bingham from Lincoln responded as follows:

"I have been using a MPS1230 printer with various XL and XE computers for around three years and have encountered no real problems. The MPS1230 has a 'standard' Centronics parallel connector and a serial connector in the form of a 6 pin DIN female connector (this unfortunately was designed to work with something called a Commodore 64/128 only). The printer will work fine via a parallel interface (I use the MicroPrint one), and as the printer can be adjusted for different emulations, Epson FX80, IBM ProPrinter and IBM G.P., with various other functions such as carriage return etc., I found that a little bit of playing around with these has been necessary. Some word processors on the Atari worked better with different emulations. For example, with the printer set for Epson FX80 and using AtariWriter+, the hash sign prints out as an English pound sign, whereas with the SAM (Screen Aided Management by Power Per Post via Dean Garraghty) word processor, it prints the hash symbol. I have found the MPS1230 to be a great little workhorse and it can turn out pretty good NLQ quality, although graphics tend to suffer with a "banding" effect found on most 9 pin printers."

Thanks for your help, Tony, which I have passed on to Simon. It's the contributions of assistance like this which will help keep the Atari Classic alive and encourage people to continue supporting our favourite micro. I hope others will follow Tony's example and respond to other questions.

PRINTER SOLUTION 2

Also in issue 64, Richard Preston reported problems in using AtariWriter+ with his Panasonic KX-P1123 printer and single sheets. Following my suggestion to investigate the printer drivers produced by Richard Gore and available from TWAUG (P.O. Box 8, Wallsend, Tyne & Wear NE28 6DQ), Richard Gore himself has written:

"I was pleasantly surprised to see my name mentioned in the reply concerning the printer drivers I wrote for TWAUG. However, I think Mr Preston is approaching his problem the wrong way. I feel the best way to use this printer with single sheets is as follows. Write your document using AW+ as usual but don't invoke the page wait feature. Be sure you haven't disabled the printer's paper out sensor, then view your document using the 'Print Preview' option (by pressing OPTION-P) and note where the page boundaries occur. Next print your document as usual, using DRIVERX from those published in issue 4 of TWAUG's disk, assuming you don't want to use subscripts or superscripts. The printer will stop printing near the bottom of a page when the paper out sensor indicates there is no paper left, however, by pressing the 'ONLINE/SET' button you can force the printer to print the next line of text (the paper out sensor is positioned a couple of inches, effectively behind the paper so you should have enough paper left to print another three or four lines of text!), repeat this until you have printed your full page (as noted earlier), then insert a new piece of paper and press the 'ONLINE/SET' button once more and the printer will carry on as usual. If you want to use sub/superscripts, things are a little more complicated as AW+ has a 'feature' that invokes them at the start of each page (using my drivers anyway!) - this can be easily overcome by placing a CONTROL-G 5 command in the text at the start of each page (full details are given in the documentation supplied with the TWAUG disk).

The Panasonic KX-P1123 is an excellent printer at a good price. You may be interested to hear that DGS's new Atari 8-bit News-paper is printed using one.

Finally, I'd just like to get a plug in for my new game for the Light Gun - it's titled "Alien Blast" and should be available from DGS (62 Thomson Avenue, Balby, Doncaster DN4 0NU) now, priced around five pounds."

Thanks for the advice, Richard. Your comments are always welcome. Good luck with your future Atari Classic ventures - anything new for NAU?

A PRINTER QUESTION

Now we have a request from Jack Barnes of Ulverston, Cumbria:

"I have a Atari 800 and a 130XE together with an 850 interface. I purchased a Brother HR5 printer which has a RS232C Serial Interface plug from a 25 pin connector on the printer which has 10 wires connected as follows:

pin 1 Protective Ground
pin 2 Transmitted Data
pin 3 Received Data

pin 4 Request to send
pin 5 Clear to send
pin 6 Data Set Ready
pin 7 Signal Ground
pin 8 Received Line Signal Detector
pin 11 Secondary Request to Send
pin 20 Data Terminal Ready

On connecting a 9 pin D plug to pins 2 - 8 and 20 as per the 850 Interface handbook, the printer does not respond. what should I connect the other two pins to, or will I need an interface for the printer in addition? If anyone can help, i would be most grateful."

Well, Jack, judging from our past successes, I'm sure we'll get response from at least one of our Mailbag readers who will be able to supply an answer. Won't you?

LETTERS FROM FRANCE

Daniel Carrodano from Roquebrune sur Argens, France seems to be single-handedly keeping the French postal system in profit. I've had a number of letters from him over the last two or three months. Among them he mentions that he is in correspondence with Sid Berry regarding the serial printer interface mentioned in an earlier issue. Daniel has also sent more comments and disks regarding his use of ACE C, and I must apologise to Daniel as I have not had the opportunity yet to study these disks in great detail, but Daniel certainly seems to be able to use ACE C successfully.

TV PUZZLE

Jason Kendall from Bourne, Lincolnshire asks for some advice:
"I have a 130XE and a Fidelity TV (2201 model). When using the computer, the colour flashes on and off if the TV has been on for a minute or so beforehand. If the TV is off for a long time (say fifteen minutes) the colour comes on OK. With the Atari STE, the colour comes on either way. The 130XE is okay with another TV. Is the problem with the XE/TV or cable from the XE? Can it be fixed?"

Can anyone shed some light on this?

ATARTRIS II

Jason continues, *"I was amazed at how good 'Atartris II' (the issue 63 disk bonus) was. However, on 2-player co-operation mode, occasionally a 'Mr Blobby' 4x4 block appears at the start of a level if player 2 has won the previous round. Also, player 1 gets frozen for a while - their piece hangs in mid-air. Can this be resolved? As for saving the high scores, you need to copy all the files to a DOS 2.5 disk rather than just write-enable the issue disk as DOS is needed to access the file."*

Glad you're enjoying another of the disk bonuses even if there is the occasional 'feature' - anyone got any fixes for them?

INDUS DRIVES

From Rickmansworth, Herts, Jack Iles is pleased to report that following issue 64,and his request for information about the Indus GT disk drive, he has *"...already had some response from an ad in the 'Contact' column."* Ye olde Mailbag Editor was also able to dig out some info in the form of an original advertisement and a couple of reviews of this drive and passed them on. Jack hasn't *"...got the drive operating yet, but I will keep trying! Meanwhile, I've bought a XF551 and a 1029 printer and I'm really getting into DOS, WP, CAD, etc.! I'm amazed by the amount of really good stuff there is in the PD library, and have made contact with some User Groups and magazines. Are other old computers supported as enthusiastically I wonder, or is the Atari 8-bit really special?"*

Glad to hear you're making progress, Jack. It certainly seems as though the Atari 8-bit is a "Classic".

CLASSIC vs IBM

Regular correspondent Sid Berry starts his letter with *"I had not intended to write to MAILBAG this month due to ill health and the large amount of hardware waiting to be repaired which has arrived since my first letter was published. All my spare time is taken up answering letters and repairing faulty equipment or should I say repairing or rectifying tampering. In fact, all except one job that has arrived here has either been damaged physically or has been dismantled and then reassembled incorrectly and presumed not to work. I wonder why people do not leave things alone when they do not understand them?"* As they say, Sid, a little knowledge is a dangerous thing. Sid continues by observing that Derek Fern only needed 50 people with an interest in Atari to make a trip to the German Atari Show possible, *"...but only 27 could take the time to stand up and be counted!"* Sid goes on to describe his recent experiences with having a IBM PC clone installed at the local company of which he is a director. To cut a long story short, it took a month to get the machine configured correctly and up and running. *"So what has this to do with my Atari? Well, it was very easy to obtain help and upgrades and a mouse and using a hard drive is fantastic so is the RAMDRIVE.SYS file the EMS memory manager the AUTOEXEC.BAT and CONFIG-.SYS. If only my Atari could do half of this I would be happy and of course because there is so much available and so many suppliers the price is kept down. As an example, to fit a hard drive to my 800XL will cost, allowing for exchange rates and size of drive, about £300; to fit same to the IBM clone, about £60, and I can have it today! This discovery of another computer that can tempt me away from my first love has prevented me from ordering a drive from C.C.S. in New York and some of the other goodies they can supply as I have to count the cost and lots of us have to seek value for money I suspect. I may be selling all my Ataris and buy an IBM clone. NO - I won't of course, but I am tempted. What do you make of that, should I keep to my Atari or would it make more sense to buy an IBM clone? Just think of all the hard work that Les and his team of contributors put in to keep the 8-bit Classic alive and then only 27 true Atari supporters can be found to go on a trip. Yes I wrote to Derek confirming I would go if he pulled it off. It is enough to make you want to quit and sell PC software and to hell with them. Well I for one hope you don't quit and I hope enough support is forthcoming to keep Page 6 alive and well."*

As usual, thanks for another interesting letter, Sid. Such comments help to keep the old Mailbag alive. I wonder if we'll get any response? We should get at least 27 letters, shouldn't we?

ADVENTURE SOLUTIONS OR JUST HINTS?

From long-time Atarian Eddie Cousins of Sutherland, Scotland:
"There has been one thing creeping in over the last few issues ,and that is the printing of complete solutions to Adventures and other games - which in my opinion defeats the object of the software. A programmer may spend months on producing an item of software only to find the solution is published within weeks of its launch. This is counter-productive to the software's success. I have often not bought an item because prior to purchase I have seen a complete breakdown in "New Atari User". Let's face it, when you're stuck on a problem, it's hard not to peek at the answer. I'm not against hints and tips that may help towards the the common aim of solving the game, but surely circumspection is called for. I recently bought 'Tarkus' and in the next issue of 'NAU' there was a complete breakdown of the game. Surely just hints would havé sufficed? The fun of such software is getting the old grey cells working and feeling good when it is solved, with maybe only a modicum of hints if it is difficult, but not complete maps/brewing of spells/whole solutions, please!"

As a self-confessed Adventure addict, I

sympathise with your views, Eddie. The difficulty is, I think in a number of cases of being able to give the right hints appropriate to what an individual has achieved. One hint may in itself assume that the player has already completed another part of the puzzle. Then of course, how do you encode solutions? I think Infocom had one of the best ways with their 'InvisiClue' booklets. Various questions were printed in clear, but the answers were invisible until you ran a 'magic marker' pen over them. Thus you were able to reveal a little at a time. Infocom also included a number of red herring questions, so you couldn't make assumptions from reading the content of the question list! What do other people think? What would you like the NAU Tipster to do?

SOFTWARE RECOMMENDATIONS

Eddie Cousins also notes that *"8-bitters should not complain about the lack of quality software - there is some super stuff on the market. Tiger Developments and Derek Fern both produce affordable first class software, some of it no more than a fiver. I have just bought 'The Citadel' from Neil Ottaway of Tiger Developments and the two 'Tarkus' disks, and they are excellent. Graphics and sound along with game-play are superb and if you include their other title 'Miecze Valdgira' then you are set up for quite a few hours of problem solving without the fear of being zapped to death in the first ten seconds. The Tiger Demo disk gives you the chance to see some of their titles before you commit yourself. Tiger also produce some software on cassette."*

I think Eddie likes these games...

ST SPOT

David Bennett from Coventry asks:

"...can you help me with a question about starting up the Atari ST? With the 8-bit Classic, I switch on the disk drives first but the ST has one drive built in. I have seen much conflicting advice about starting up the ST - some say switch on with a disk in, others say this will harm the disk as the magnetic field changes in the heads."

I'm not an ST owner, but Les Ellingham advises that "...it makes no difference whether you switch on with or without a disk, it just takes longer if there is no disk as the computer tries to read the non-existent disk. Switching on without a disk guarantees a clear memory but so does booting with a 'clean' disk. If you want to speed up the boot process just make a boot disk by formatting it and write protecting it immediately so it cannot be infected by a virus. Talk about damaging disks is nonsense if you think about it. If it were true then every commercial game disk would become damaged since most of these have to be booted from drive A."

S Beauchamp, Crawley, West Sussex has a cautionary tale:

"On 25 March 1993 I purchased from Silica Systems (Sidcup, Kent) a Viewtek Monitor VT12 with a Atari 1040STE Music package; both items were new. A couple of weeks ago I wrote to Silica Systems asking if they could supply a service manual or circuit diagram for this monitor; I stated that I was prepared to pay for the information. Today I received a reply from SDL stating that unfortunately they do not have any technical information on this monitor. As the monitor was only recently introduced by them, what sort of repair would one get if the monitor were to malfunction? All I can say is "Buyer Beware!"

My reason for requesting information was that I wanted to use the monitor with another computer, so I needed the pin out of its connector at least so as not to have to open it up because the monitor is still under warranty, and I have since been given a colour monitor which I adapted for the 1040STE. A newly introduced item like the Viewtek monitor should have proper technical backup with circuits and technical data to enable quality service and repair to be carried out should the need arise - suppliers please take note!"

SOUND ADVICE WANTED

Now here's a little more from Daniel Baverstock whose letter we featured earlier.

"Re Mark Watson's letter in issue 62, I too would love to see an article or even a series on sound sampling. Many great demos (e.g. HobbyTronic) have been produced using samples. I have at least 300 samples and I have managed to work out amazing sound effects that play forever, many using over 50 sectors of a normally formatted disk. the kind of crystal clear samples I refer to are guitars, drums, synths, and many gun, laser, engine, alien sound effects. About 450-500 sectors is equivalent to 64K, so you can see playing, e.g. a sample of a guitar at different tones, just as DigiSynth can do from the REPLAY system, can mean practically a whole guitar sequence using one sample. This would mean other samples can be stored in memory, and as Mark says, two tracks can be played at once, with the samples only taking up between 100 to 200 sectors. I hope people will write to NAU and other Atari magazines if they wish to see samples more widely used. Can samples, or any utility/game be compressed like the files are on the MEGA-Magazine disks? I've seen 200 sector files compressed into less than 100 sectors."

Well that's an interesting subject for a future NAU article if there's someone out there who can write it. Check out Page 6's Pedrokko disks for some idea of sounds.

MORE NOTES FROM THE NETHERLANDS

In a previous column, I included some extracts from a lengthy letter from Bill Walraven of Breda, Netherlands. Here follows a few more extracts from Bill's missive:

"Machine Language subroutines are often situated in page 6 of the Atari memory (X = USR(1536)). Without knowing HOW they work, I use them and when using more than one in a program I put each routine in a string and when the actual time comes to use them, I simply move the routine I need into position (from Turbo BASIC, MOVE ADR(ROUTINE$),1536,LEN(ROUTINE$)). I find Turbo BASIC most useful.

Turbo BASIC's status is unclear. How P.D. is it? In Holland and England it is available as P.D. In Germany, it was published by 'Happy Computer'; so anyone could borrow the mag, type it in and use it, or pretend that was done. So ownership on disk of this or any other program that was published can never be said to be illegal. What is your point of view?

In the manual of the print program SPRINT (German), I encountered the specification E24, P24, and P9 for print fonts. Can anyone explain these?"

My immediate thought is that P9 suggests fonts designed for 9-pin printers, P24 suggests 24-pin printers and E24? *(NEC do a P series of printers which are popular in Germany, so I would say that the P prefix refers to NEC printers and the E to Epson with, as Allan suggests, the number referring to the number of pins. Ed.)*

MORE QUESTIONS

Roger Roy (I hope I've interpreted your signature correctly) writes from Woodbridge, Suffolk:

"I have already written to you before. Why can't you write back? Has it not got through? Or can't you be bothered? Last time I wrote was to ask you if you could find out how to use my brother's computer cassette player to record cassettes on. His computer is XE 65. As I am writing this letter I would also like to know how to record on a disk drive Atari STE."

Sorry Roger when I took on the post of Mailbag Editor, I didn't find any previous letter from you in the sorting office. In the meantime, you are asking the sort of question which can be answered in many ways,

depending on what language you are writing programs in (I assume that's what you want to record...). The simple answer for the 65XE with an Atari-compatible recorder (410/1010/XC11 or XC12) is when using BASIC, you use the CSAVE or SAVE command. Perhaps someone would like to recommend a text or provide a tutorial for this process on the Classic and the ST?

PRINT BUFFERS AND VISICALC

Another regular correspondent, Ray Pawson from Muswell Hill, London asks *"...whether there are still any printer buffer/spoolers available which can be used with the Atari Classic. I remember that there were several available a few years ago. Does anyone know know of any and how much and where from?"*

Ray also appears to be a user of VisiCalc, once a highly professional/expensive program released for the Atari (and other microcomputers) in the early 1980s, he enquires if "...anyone has hacked into VisiCalc to improve it in anyway? Although VisiCalc is now somewhat old, it is still very versatile and easy to use but it would be handy to know if anyone has been able to adapt it to be used with, for example, DOS 2.5 or SpartaDOS or MyDOS; or how about being able to change the colour from the boring standard blue and white; use a RAMdisk or the extended memory of a 130XE; and what about variable column widths? Obviously one can't expect CA-SuperCalc or Lotus 1-2-3, but I think these changes would radically improve VisiCalc."

Interesting suggestions Ray. Has anyone experimented like this, or how about someone contributing an extensive comparison of the various spreadsheet programs available for the Atari Classic? (Yes there are other ones - see past issues...)

The Dreaded Deadline Doom is hanging over me, so it's time to wind up this instalment of Mailbag. I've just realised this is my sixth column, marking the completion of my first year as Mailbag Editor for New Atari User. I hope you're still finding the column interesting and that you'll continue to keep the sorting office busy by sending in plenty of correspondence for future issues. Let's have more questions that the assembled horde of Atarians can get their teeth into, and please feel free to send in your comments on anything related to the Atari Classic. By the time this is printed, I may have had the opportunity to meet some of you at AMS7, if I can fit in a trip to darkest Stafford in between other commitments. In the meantime, Merry Xmas and all the best for an Atari-ful New Year!

CREATING YOUR OWN DRILLS FOR TOUCH TYPING

by Noel Harris

Have you ever found that you're such a good typist that you've used all the files supplied with Touch Typing? Would you like to use texts of your typing books so you can time yourself? You don't know how? Then fret no longer as I have discovered how you can create your very own extra 'drills' without the need of any fancy programs to type in.

How does this happen? Well, for an exercise, try this. With no other files in memory insert the "Practice Text for Advanced Typing" cassette (Tape B of the pack) into your cassette unit, type ENTER and press RETURN. You find that you get line after line of errors but the computer also displays the text line by line. You will also notice that will also work with Atariwriter files (see page 45 of the Atariwriter manual for this). Now boot up Atariwriter (this probably works better with the older cartridge version) and try to load the same file, after a few minutes hit the break key as the file will overwhelm the memory. Now edit the file and you will notice that the texts are all there! And it is this very compatibility with Atariwriter that is the secret of making your own files. Note that when you make your own files using the method outlined below you should make the files using Atariwriter

CONSTRUCTING YOUR OWN DRILLS

When you are making your own files for Touch Typing, you must know how these files should be constructed. Each file or drill contains six lines separated by a dummy line or separator to tell the program the end of a drill.

Each line consists of 38 characters plus a RETURN keypress and is made up in the following order:

1: The first 36 characters can be letters (upper or lower case), numbers or punctuation marks.

2: The last two characters must be spaces followed by RETURN.

In the following example important keypresses are in square brackets ([]).

EXAMPLE:

This is the end of a line, when done [SPACE] [SPACE] [RETURN]

Each file is separated by the separator, this also contains 38 characters, but in the following order:

Four full stops (....) followed by 34 spaces and RETURN.

IMPORTANT NOTES

Now you can make up your own files there are just a few things to add concerning your new drills:

1. When using Atariwriter you must remove the defaults file at the top of the first page of data.
2. Each file must only have six lines and be constructed in the manner described above.
3. You must only use cassettes to record your files as the program cannot read off a disk drive. Also use a good quality tape. (You may put as many files as you like/can on the tape as the program only reads one file at a time.)
4. You can only use word processors that have programming capability i.e. can have files loaded into the computer as a program with the ENTER command (Atariwriter would be the best to use).
5. Use the new files only with the Advanced part of Touch Typing.

And there you have it, like the Trivial Pursuit Question Maker in a previous issue of New Atari User there is a lot of work to do but it does work. If you like you could use your typing textbooks in order to time yourself. At least there wasn't a four mile long program to type in!

PLAYER MISSILE GRAPHICS

Don't worry if you have never tried player missile graphic programming as Ann O'Driscoll's explanation should make things easy

PMGs - also called "sprites" or "movable object blocks" are stripes or grids on which pixels are plotted. They are displayed by the Antic chip and the chip redraws the background when they move.

The only difference between a "player" and a "missile" is that players are 8 colour clocks (2 GR.0 characters) wide while missiles are only 2 colour clocks wide. Player/missile length or height can be up to 128 pixels in double resolution (the default setting) or up to 256 pixels in single resolution. The machine allows you define 4 players and 4 missiles (numbered 0 to 3). A 5th player can be defined by combining missiles.

Player missile graphics are very useful in games programming because they work independently of their background (so you don't have to redraw the underlying scene when they move away). Other features of the PMG system include special memory locations which can be read to detect when players meet each other or background objects, and the facility to change the graphic size very quickly on screen, thus creating 3-D effects. In spite of the advantages, some people are put off using players and missiles because it is assumed that a good knowledge of machine language programming is necessary to use the PMGs effectively. However, as the listing shown here demonstrates, you can in fact access nearly all the features of the PMG system without going near machine code. The program defines 2 rabbits (player 0 and player 1) and puts them on a Graphics 7 screen. Player 0 moves horizontally and shows properties of the PM system like collisions and priorities. Player 1 moves vertically with the help of a small machine code routine.

SETTING UP THE PLAYER MISSILE SYSTEM

1. Reserve memory for the stripes: The amount of RAM you need to set aside depends on whether you are using single or double resolution. The double resolution mode of two screen lines for every data line uses 128 bytes per player while single resolution (one screen line per data line) uses 256 bytes per player. It follows that you'll need to reserve more space for single resolution. Also, one of the requirements of the system is that the reserved memory area must start on a 2K boundary (i.e. no remainder when you divide the RAM start address by 2048) for single resolution and a 1K boundary for double resolution modes.

LINES 80-90 of the listing set aside a 2K area in high memory for the stripes. LINE 110 tells ANTIC where the PM base is by poking the page number of the address where the area starts into memory location 54279. Table 1 shows where the player missile graphics data is stored within the reserved area. The numbers in brackets are for double resolution. You will see that all 4 missiles fit into one block: Missile 0 uses the first 2 bits of each byte (numbered 0-1), missile 1 uses the next 2, missile 2 uses bits 4-5 and missile 3 uses bits 6-7.

2. Clear out PM area: It's usually a good idea to to get rid of any old bits of program from the player missile area before you start putting in your own data. LINES 140 to 160 clear the player 0 and player 1 memory areas by poking the relevant addresses with 0s. We're only using the first two players so we don't need to clear any more.

3. Put shape data into the stripes: You define a player missile shape the same way you design a character,

PM start	----------------------------------
	Not used
PM start + 768 (384)	-------------
	Missiles
PM start + 1024 (512)	-------------
	Player 0
PM start + 1280 (640)	-------------
	Player 1
PM start + 1536 (768)	-------------
	Player 2
PM start + 1792 (896)	-------------
	Player 3
PM start + 2048(1024)	-------------

TABLE 1: Layout of player missile memory area

```
QK 1 REM ****************************
PF 2 REM *  PLAYER MISSILE GRAPHICS  *
AY 3 REM *      A demonstration      *
DA 4 REM *     by Ann O'Driscoll     *
IZ 5 REM * ------------------------- *
NQ 6 REM * NEW ATARI USER - DEC 1993 *
QQ 7 REM ****************************
BC 50 REM
BP 68 REM  RESERVE AREA FOR PMGs AND
CV 69 REM  DEFINE THE PM BASE
TU 70 GRAPHICS 7:POKE 708,138:POKE 709,44
   :POKE 710,164:POKE 712,0
RT 75 POKE 752,1:? CHR$(125);"↓}Wait a se
   cond...."
XD 80 PMB=8*(INT(PEEK(742)/8)-1)
QB 100 PMBASE=PMB*256
GO 110 POKE 54279,PMB
KT 138 REM  CLEAR PLAYER 0 + PLAYER 1
ZG 139 REM  AREA BY POKING WITH NOUGHTS
DC 140 FOR N=0 TO 511
PP 150 POKE PMBASE+1024+N,0
IB 160 NEXT N
QG 188 REM  READ IN THE SPRITE DATA IN
DH 189 REM  TO VERTICAL POSITIONS
UQ 190 FOR N=0 TO 15:READ B:POKE PMBASE+1
   024+90+N,B:NEXT N
BC 200 DATA 0,96,96,126,110,126,120,120,1
   26,120,120,124,252,255,127,0
ZZ 210 FOR N=0 TO 15:READ B:POKE PMBASE+1
   280+90+N,B:NEXT N
HX 220 DATA 0,6,6,126,118,126,30,30,126,3
   0,30,62,63,255,254,0
MV 249 REM  SET PLAYER COLOURS
ML 250 POKE 704,14
PQ 255 POKE 705,54
JF 279 REM  SET PLAYER WIDTHS
SJ 280 POKE 53256,0
US 285 POKE 53257,2
BK 349 REM  TELL ANTIC WHAT YOU WANT
UP 350 POKE 559,58
SR 379 REM  ENABLE PLAYERS
VE 380 POKE 53277,2
HC 399 REM  SET THE PRIORITIES
LX 400 POKE 623,8
KI 548 REM  SET UP M/C ROUTINE FOR
VL 549 REM  VERTICAL MOVEMENT
XS 550 RESTORE 560:FOR N=0 TO 86:READ B:P
   OKE 1536+N,B:NEXT N
VI 560 DATA 104,201,3,208,81,104,133,225,
   104,133,224,104
AB 570 DATA 133,227,104,133,226,104,133,2
   29,104,133,228,169,0,133,230,133,231,1
   68,177,224,145,226,24,169,1,101
FI 580 DATA 224,133,224,169,0,101,225,133
   ,225,24,169,1,101,226,133,226,169,0,10
   1,227,133,227,24,169,1,101,230,133
OG 590 DATA 230,169,0,101,231,133,231,24,
   165,228,197,230,208,206,165,229,197,23
   1,208,200,96
GO 1999 REM   MAIN SCREEN
KT 2000 COLOR 2:FOR R=5 TO 15:PLOT 30-2*R
   ,R:DRAWTO 30+2*R,R:NEXT R
BQ 2015 COLOR 3:FOR R=17 TO 32:PLOT 0,R:D
   RAWTO 60,R:NEXT R
JL 2020 COLOR 0:FOR R=20 TO 25:PLOT 5,R:D
   RAWTO 15,R:PLOT 45,R:DRAWTO 55,R:NEXT
   R
JK 2025 FOR R=22 TO 32:PLOT 25,R:DRAWTO 3
   5,R:NEXT R
VO 2030 COLOR 3:FOR R=24 TO 32 STEP 2:PLO
   T 64,R:DRAWTO 156,R:NEXT R
WI 2040 FOR C=65 TO 155 STEP 10:PLOT C,24
   :DRAWTO C,32:NEXT C
MW 2050 COLOR 2:FOR R=15 TO 50:PLOT 99,R:
   DRAWTO 101,R:NEXT R
LZ 2060 COLOR 1:DEG :PLOT 110,10:FOR R=0
   TO 360 STEP 20:DRAWTO 100+10*COS(R),10
   +10*SIN(R):NEXT R
EP 2070 COLOR 1:FOR R=20 TO 40:PLOT 128,R
   :DRAWTO 144,R:NEXT R
XT 2080 ? CHR$(125);"Move the white rabbi
   t left/right with":? "a joystick. Pres
   s SELECT to pass"
LZ 2085 ? "control to the other rabbit."
AQ 2999 REM  MOVE LEFT AND RIGHT
OI 3000 PX0=73:HP0=53248
TZ 3010 PX1=120:HP1=53249:POKE HP1,PX1
KN 3020 S=STICK(0):POKE 53278,0
UU 3025 IF PEEK(53279)=5 THEN 3100
MW 3030 IF S=7 THEN PX0=PX0+1:IF PX0>255
   THEN PX0=0
KJ 3035 IF S=11 THEN PX0=PX0-1:IF PX0<0 T
   HEN PX0=255
GZ 3040 POKE HP0,PX0
MH 3048 REM  PLAYER 0 COLLIDES WITH
JU 3049 REM  PLAYER 1
XV 3050 IF PEEK(53260)=2 THEN FOR D=10 TO
    0 STEP -1:SOUND 0,D,10,10:NEXT D:POKE
    53278,0
MK 3058 REM  PLAYER 0 COLLIDES WITH
FE 3059 REM  COLOUR REGISTER 1
IO 3060 IF PEEK(53252)=1 THEN P=P+1:POKE
   53256,1:IF P/2=INT(P/2) THEN POKE 5325
   6,0
EH 3065 IF PEEK(53252)=1 THEN FOR D=200 T
   O 150 STEP -5:SOUND 0,D,10,10:NEXT D:S
   OUND 0,0,0,0:POKE 53278,0
PH 3070 GOTO 3020
GW 3098 REM  USE PLAYER 1 TO INTRODUCE
MY 3099 REM  VERTICAL MOVEMENT
QF 3100 Y=90:FOR D=150 TO 50 STEP -4:SOUN
   D 0,D,10,10:NEXT D:SOUND 0,0,0,0
DU 3105 ? CHR$(125);"↓}Wait a second...":
   GOSUB 5500
VN 3110 ? "You can now move the second ra
   bbit up":? "and down as well as left/r
   ight."
XH 3112 ? "Press the fire button to quit.
   "
DM 3115 S=STICK(0):IF S=15 THEN 3160
PF 3120 IF  NOT STRIG(0) THEN 4000
YZ 3125 X=USR(1536,PMBASE+20,PMBASE+1280+
   Y,16)
AA 3130 PX1=PX1+8*(S>4 AND S<8 AND PX1<20
   0)-8*(S>8 AND S<12 AND PX1>40)
LV 3135 IF S=14 THEN Y=Y-16:IF Y<0 THEN Y
   =255
RK 3140 IF S=13 THEN Y=Y+16:IF Y>255 THEN
    Y=0
HE 3160 X=USR(1536,PMBASE,PMBASE+1280+Y,1
   6)
RG 3165 POKE 53249,PX1
OI 3166 FOR D=1 TO 10:NEXT D
SA 3170 GOTO 3115
SG 3999 REM  END
GV 4000 GRAPHICS 0:POKE 752,0:CLR :POKE 5
   3277,0:END
OM 5498 REM  POKE SPRITE DATA INTO THE
OE 5499 REM  PMBASE START
IK 5500 REM
YA 5510 FOR N=0 TO 255:POKE PMBASE+N,0:NE
   XT N
VS 5530 RESTORE 5535:FOR N=0 TO 15:READ B
   :POKE PMBASE+N,B:NEXT N
SC 5535 DATA 0,6,6,126,118,126,30,30,126,
   30,30,62,63,255,2$4,0
XM 5540 RESTORE 5545:FOR N=0 TO 15:READ B
   :POKE PMBASE+20+N,B:NEXT N
OH 5545 DATA 0,0,0,0,0,0,0,0,0,0,0,0,0,0,
   0,0
AR 5700 RETURN
```

except that this time instead of an 8 x 8 grid you use 8 x 128 (double resolution) or 8 x 256 (single resolution). You use 2 x 128 or 2 x 256 for missiles. Of course, you don't have to use up all the available bytes. The data in LINES 200 and 220 define our two rabbit shapes, each 16 bytes long. LINE 190 pokes the data for the first rabbit into the player 0 memory area one byte at a time. We can put the data anywhere we like within the stripe - an offset of 90 was used here so that the sprite would be positioned in the top half of the screen. LINE 210 pokes in the player 1 data in the same way.

On the question of actually defining the shapes, in this case the players were relatively small and simple so the data values were worked out easily enough using graph paper. For more complex shapes it would be a better idea to use a sprite definer. For instance, there's one in the Page 6 Public Domain Library (Disk #35) which lets you draw PM shapes on a grid with a joystick and shows the data numbers alongside each line.

4. Set player colour: LINES 250 and 255 poke colour values into memory locations 704 for player 0 and 705 for player 1. Players 2 and 3 use colour locations 706 and 707. Missiles have the same colour as their associated players - i.e. player 0 and missile 0 both use shadow colour register 704, player 1 and missile 1 use colour register 705, and so on. If 4 missiles are combined to make a 5th player then this player takes on the colour in shadow memory location 711.

5.Set player width: You control the width of your players using memory locations 53256-9 (53256 for P0, 53257 for P1, etc.), while the width of all 4 missiles is controlled by memory location 53260. Poking in 0 or 2 gives "normal" width, a value of 1 gives double width while a 3 quadruples the original width. This listing uses normal width (LINES 280-285).

6. Tell Antic what you want: This is done by setting specific bits in memory location 559. We add up the bits that are "on" to get the value to be POKEd in to the memory location. The options are outlined in Table 2. LINE 350 pokes in a value of 58, made up of normal screen (2) plus enable players (8) plus single resolution (16) plus turn on Antic (32). As double (2 line) resolution is the default setting you don't have to add a value to location 559 to get it.

7. Switch on the system: LINE 380 switches on the players by putting a 2 into memory location 53277. Poking a 3 in here would enable the missiles as well, while poking a 1 would switch on the missiles only.

8. Set the priorities: Finally, when players and the graphics display occupy the same screen location we must decide whether to show the player or the graphics objects. This is called "priority selection" and we control it by poking a number into memory location 623. Priorities are given in terms of colour registers and the available options are set out in Table 3. The background colour (register 4) always has the lowest priority and missiles have the same priority as their associated players. Also, when players overlap on the screen, player 0 always appears in front of the other players, player 1 has precedence over players 2 and 3, and so on - we don't control this order.

LINE 400 of the listing puts a value of 8 into 623, which means that the players will appear behind objects drawn using colour registers 0 or 1 but in front of anything drawn in register 2. Incidentally, location 623 is also used to control other player missile features:- If you're combining 4 missiles to make a 5th player you turn on bit 4 by adding 16 to the priority value (1, 2, 4 or 8); if you turn on bit 5 (add 32 to your priority value) you get a new colour when player 0 overlaps with player 1 or when player 2 overlaps with player 3.

	VALUE
No screen	0
Narrow screen	1
Standard screen	2
Wide screen	3
Enable missiles	4
Enable players	8
Single resolution	16
Turn on Antic	32

TABLE 2: screen specifications for memory location 559

SCREEN DISPLAY

LINES 2000-2085 of the listing draw a scene showing a house, a fence, a tree and a box. The house walls and fence are drawn using colour register 2 (COLOR 3) so our players will appear in front of them. The players will be hidden by the tree and box, as these are drawn using registers 0 and 1 (COLOR 1 and 2 respectively).

THE BASIC ROUTINE

Horizontal movement: Each player and missile has its own horizontal position register, stored from memory locations 53248 (for player 0) to 53255 (for missile 3). LINES 3030-35 update the player 0 X axis co-ordinates when the joystick is pushed left (S=7) or right (S=11), with the "IF" statements giving a wrap around effect. LINE 3040 moves the player by poking the new value into its horizontal position register. While you can poke in any numbers between 0 and 255, values of less than 48 or more than 208 do not appear on the screen. The player's vertical position was determined when the shape data was POKEd into the PMG area; this won't change in our basic routine.

Collision detection: Altogether there are 16 registers which detect the 4 types of collisions or overlap possible: Between player/player, player/missile, player/display and missile/display. These are found from memory locations 53248 to 53263 and are summarized in Table 4. A separate single memory location, 53278, must be poked (with any number) to clear the collision registers. In this program this is done each time the stick is read (LINE 3020) and after every collision (LINES 3050 and 3065) so that old values don't throw off the PEEK routine.

	VALUE
All players > all colours	1
P0-P1 > all colours > P2-P3	2
All colours > all players	4
C0-C1 > all players > C2-C3	8

TABLE 3: Priority order values for memory location 623

The collision effects used are very simple - LINE 3050 gives a few high beeps when player 0 passes over player 1 and LINE 3065 gives some low beeps when player 0 goes behind the box (colour register 1). LINE 3060 also makes player 0 change size by poking its width register with a 0 (normal) or a 1 (fat) when it meets register 1: The counter (P) goes up by 1 at each collision and normal size is restored for even numbers. Generally speaking, if you move the rabbit into the box from the right you increase his size while moving him out to the left returns him to normal width.

MACHINE CODE ROUTINE

While everything in the demo so far has been done with Basic, the one problem is that we can't move our sprites vertically - Because player missile stripes extend the whole length of the screen, you don't have any vertical equivalents of the horizontal position registers. This is where the bit of machine programming comes in. The code used here was taken from a game called "Nuts" by John Gymer published way back in issue 26 of Page 6. The routine is called up each time you want to place something on the screen with

X=USR(*1536,Memory location of data to be moved,Memory location of data destination,Number of bytes to be moved*)

1536: This the starting address of the memory area where the machine code routine is located. The code was read into memory by LINES 550-590 of the program.

The memory location of the data to be moved: The movement loop places the sprite data on the screen (LINE 3160), rubs it out by putting blanks in the same vertical positions (LINE 3125), updates the horizontal and vertical co-ordinates (LINES 3130-40) and repeats the process. Therefore, two separate sets of data - the sprite data and the rub out data - need to be moved. Both sets are POKEd into free areas at the start of the player missile base by LINES 5530 and 5540. LINE 5510 of this subroutine, which is called up before the movement loop comes into operation, clears out the opening 2 pages of the player missile reserved area first.

The memory location of the data destination: This will be within the 256 byte area from PMBASE+1280 to PMBASE+1535 because we are moving player 1 this time. The joystick movement routine at 3135-3140 determines the offset (Y) from the start of player one's memory area. The jumps of 16 were used to give a nice smooth effect.

DISPLAY COLLISIONS		
53248 - 53251	**Missile 0-3/Display**	
53252 - 53255	**Player 0-3/Display**	
		VALUE
Collide with register 0		**1**
Collide with register 1		**2**
Collide with register 2		**4**
Collide with register 4		**8**
PLAYER COLLISIONS		
53256 - 53259	**Missile 0-3/Player**	
53260 - 53263	**Player 0-3/Player**	
		VALUE
Collide with player 0		**1**
Collide with player 1		**2**
Collide with player 2		**4**
Collide with player 4		**8**

TABLE 4: Collision detection registers

Number of bytes to be moved: This is set at 16, which is the length both of the rabbit data and the "rub out" data used in this listing.

Horizontal movement follows the principles used for player 0, except this time we're updating horizontal position register 53249 (LINE 3165). LINE 3130 shows how to keep the player on the screen instead of using the wrap around effect used with player 0. Also, as jumps of 1 were too slow when used in conjunction with the vertical movement routine, an increment of 8 was used in this section of the program.

ENDING THE PROGRAM

The POKE 53277,0 in LINE 4000 turns off the players and stops you getting vertical lines down the screen when you quit. ●

MAZE PRINT

```
QK 1 REM *****************************
KK 2 REM *         MAZE PRINT        *
FE 3 REM *       by David Lamont     *
IY 4 REM * ------------------------- *
WP 5 REM * NEW ATARI USER - DEC 1993 *
QP 6 REM *****************************
NM 7 REM
GA 40 DIM A(39,79)
BJ 50 FOR X=0 TO 79:FOR Y=0 TO 39:A(Y,X)=
   0:NEXT Y:NEXT X
TM 60 FOR X=0 TO 79
BF 70 A(1,X)=2:A(2,X)=2:A(38,X)=2:A(39,X)
   =2
OB 80 NEXT X
RD 90 FOR Y=2 TO 37
HH 100 A(Y,0)=2:A(Y,1)=2:A(Y,78)=2:A(Y,79
   )=2
LX 110 NEXT Y
RN 120 FOR X=0 TO 79:FOR Y=0 TO 39:COLOR
   1:PLOT X,Y:NEXT Y:NEXT X
QN 170 X=4:Y=4+2*INT(RND(0)*16)
OU 180 FOR X=0 TO 4:COLOR 0:PLOT X,Y:NEXT
   X
PC 190 A(Y,X)=2
CW 200 IF A(Y,X+2)<>0 AND A(Y,X-2)<>0 AND
   A(Y+2,X)<>0 AND A(Y-2,X)<>0 THEN GOTO
   400
UX 210 COLOR 1:PLOT X,Y
UO 220 COLOR 0:PLOT X,Y
IE 250 R1=INT(RND(0)*4)
AT 260 C=X+2*(R1=0)-2*(R1=1)
EH 270 D=Y+2*(R1=2)-2*(R1=3)
RQ 280 IF A(D,C)<>0 THEN 210
PR 290 E=(C+X)/2:F=(D+Y)/2
MI 310 A(D,C)=1:A(F,E)=1
DA 340 PLOT E,F
KL 350 X=C:Y=D
MG 370 GOTO 200
ON 400 A(Y,X)=2
SX 410 PLOT X,Y
BP 420 IF A(Y,X+1)=1 THEN 500
HM 430 IF A(Y,X-1)=1 THEN 550
FT 440 IF A(Y+1,X)=1 THEN 600
LM 450 IF A(Y-1,X)=1 THEN 650
KA 460 Y=4+2*INT(RND(0)*16)
AY 470 FOR X=77 TO 79:PLOT X,Y:NEXT X
KB 490 GOTO 1000
LN 500 A(Y,X+1)=2
XN 510 X=X+2
MC 540 GOTO 200
MR 550 A(Y,X-1)=2
YN 560 X=X-2
MM 590 GOTO 200
OQ 600 A(Y+1,X)=2
YA 610 Y=Y+2
MD 640 GOTO 200
PQ 650 A(Y-1,X)=2
ZA 660 Y=Y-2
MN 690 GOTO 200
KI 1000 OPEN #1,8,0,"P:"
WS 1005 LPRINT CHR$(27);"1"
OF 1020 FOR Y=0 TO 39:FOR X=0 TO 79
JD 1030 LOCATE X,Y,C
RC 1040 IF C=0 THEN A=32
KQ 1050 IF C=1 THEN A=127
UD 1060 ? #1;CHR$(A);:IF X=79 THEN LPRINT
NR 1070 NEXT X:NEXT Y
```

by David Lamont

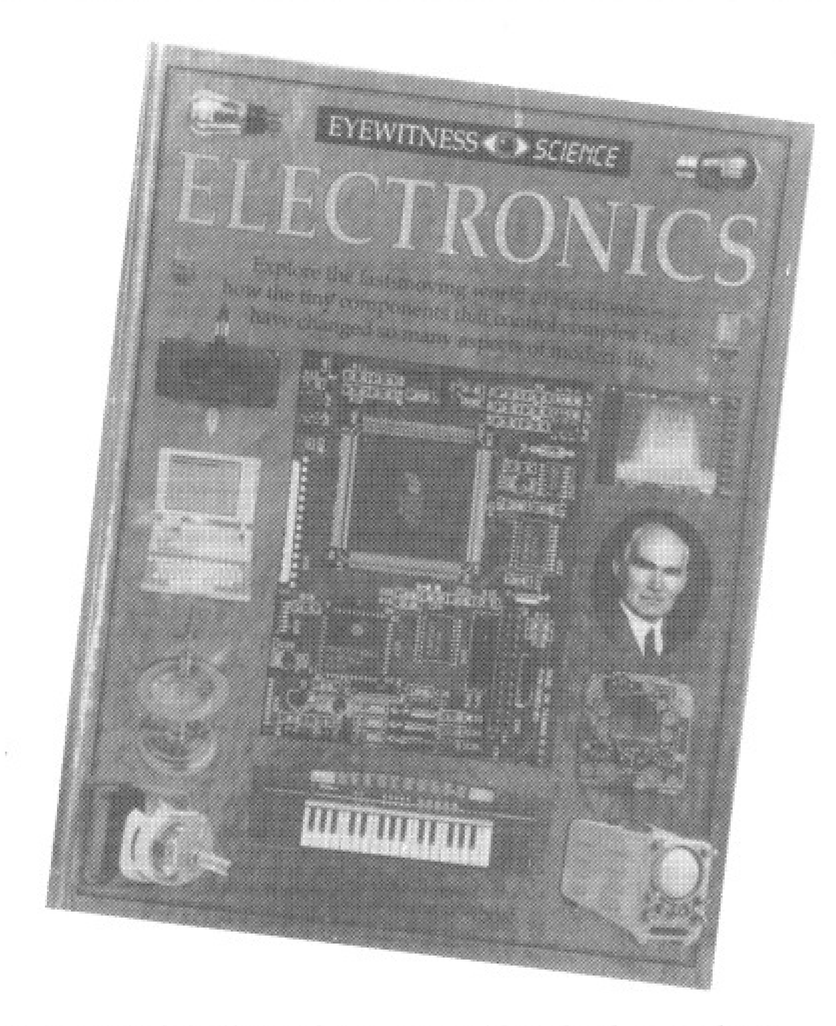
This amazing program plots a maze on the screen that has only one path through it. It is then printed out so you can solve it. I use the ATARI XMM801 printer so if you have a different one then changes may be needed to lines 1040 and 1050.

An array the size of the Graphics 4 screen is dimensioned. The program then assigns values and plots its way around until the screen is full.

Try changing to a Graphics 3 screen and altering the size of the array.

I am currently working on an idea for a game which will either use screen flipping and several Graphics 3 mazes or a Graphics 4 maze divided into several sections. More about that in a later issue.

Eyewitness Science
ELECTRONICS



It is not often that we review something that has not got direct reference to the world of the Atari Classic but here is a new book that anyone who has wondered just how their Atari works will find fascinating. It is not a computer specific book but covers the whole field of electronics from the discovery of electricity to the present day microchip.

ELECTRONICS is one of the Eyewitness Science range produced by Dorling Kindersley aimed at young persons. Although no age is suggested it is probably suited to children from nine or ten upwards, and upwards means all the way for this is also a book that will help mums and dads answer all those embarrassing questions when enquiring minds start to wonder just how that Atari computer works and how the video records pictures.

The book is very attractively laid out with a good balance between pictures and text. Each double page spread represents one aspect of electronics and is almost equally balanced between pictures and text. The pictures are wide ranging and varied and excellently captioned with key elements pointed out by lines connecting the text and pictures. Even the most complicated component is relatively easy to understand.

IN THE BEGINNING

The opening chapter explains just what electronics is with examples ranging from the telephone to a heart monitor so the reader will know what sort of things in everyday life are dependent on electronics. In order to understand how these extremely complex devices work, however, it is necessary to understand the development that went into many things we now take for granted and so we are immediately transported back to 1840 to see how communications and signalling were handled with purely mechanical means. It would not be long before Michael Faraday was to begin his experiments with electricity and magnetism.

Just what a huge leap electricity provided is shown on the next spread with a picture of a video recorder, minus cover and fully captioned, alongside pictures of Faraday and Oersted who discovered the original link between electricity and magnetism. With a starting point established over 150 years ago, we are now ready to begin the journey to understanding the components of electronics such as resistors, transformers, capacitors and the like.

Everybody has heard of the components that go into radios, televisions, computers and the like but how many of us understand how they each work? Eyewitness Electronics will not turn you into a scientist but will give you a good understanding of what is going on inside these tiny pieces of equipment that mean so much to our life today. Capacitors, for instance, store electricity but how? As well as giving a proper scientific explanation the procedure is explained by analogy to a balloon being blown up until it can take no more air, either you can force no more in or it explodes. Useful analogies like this help explain many other components and concepts.

Flip the book open at any page and you will find something interesting from things that you never thought about to things you use every day. Did you know, for example, that lifts use logic gates to memorise and sort calls into sequence to give the shortest waiting time? I always thought that they worked liked the Grand Old Duke of York, when they were going up they were going up and when they were coming down they were coming down. It was just your luck that you pushed the button on the ground floor as the lift set of for the penthouse suite. Apparently not, for lots of electronics are working out how to get the lift to you in the shortest time. Pity nobody has invented a little panel that tells you that it is going to be quicker to take the stairs!

THE MICROPROCESSOR

The things that most youngsters are going to be interested in are towards the back of the book, for it has taken a long time to get where we are today in the world of microprocessors and microchips. The joy of this book is that they can go straight to their favourite part, pull out some intriguing facts, and then go back to see what was happening in earlier days. One of the delights of any good book of facts is when you can dip in whenever you fancy and pull out another piece of information of the 'did you know ...' variety. The Eyewitness guides score highly here and will keep kids and parents entertained for a long while.

The Eyewitness Science guides are available from any bookshop with a good children's section and cost £9.99 each. Titles already published are Electricity, Force & Motion, Light, Matter, Energy, Evolution and Chemistry with the Human Body and Ecology to follow. At £10 apiece they are not cheap but they are beautifully presented and designed to last a long while. With Christmas coming up this would make an ideal alternative, or extra, present and will be in use long after the latest computer game has been long forgotten. Try something different that will expand your kids' minds and get you off the hook when you can't remember just when the Randall and Boot magnetron was invented!

A FUNNY LOT

Kevin Cooke takes a wry look at Atari owners - watch it you might be in here somewhere!

What is is that makes computer owners become addicted to their computers? Without computers, many jobs would take a lot longer, or would they? This article will take a look at every type of computer owner. At first it may all seem a little far fetched, but is it? Aren't we all from at least one of these groups?

GAME FANATICS

This is usually the first stage that people go through when they get a computer. Even if you are not one now, don't you remember playing games for hours at a time? This section of people can be split up into many sub groups.

PLATFORMERS: This group of people must be one of the worst of all the game owners. On consoles, these games consist of running along platforms and occasionally falling off to jump on enemies' heads. On computers, these games involve guiding an unnamed character through numerous levels, performing pixel perfect jumps. Do we ever know why we have to do this, and do we really care? And is it really fun? Of course it is, but why? If anyone knows, perhaps they could tell me.

SHOOT 'EM UP FREAKS: These are just as bad as the platformers. Why in the scripts of these games, are you the only one capable of saving your planet from destruction? Probably because of all of the practice you get playing these games all day.

ADVENTURE ADDICTS: Lets face it, the reason we all hate adventurers is because most of us can't even solve the simplest of these games. We come out with sentences like "So what if your new adventure game has got 2000 locations. My database is capable of holding 5000 records". We then watch as the experts solve puzzle after puzzle and complete the game that same day. Is this why we pretend that our game must have a bug, and use that as an excuse not to play it?

ROLE PLAYERS: These people belong with the adventure addicts. They manage to kill the strongest of all the creatures and survive for days, when most of us can't survive for more than half an hour. How do they do it? Ordinary mortals have to resort to cheat tactics. Have adventurer addicts and role players found a secret that the rest of us don't know about?

SIMULATION FREAKS: These people seem to lead a totally boring life. After flying an aircraft for three hours with one hand, they give you an in depth report of their flight. Does anyone really want to know what altitude they flew over Japan at?

WAR GAMERS: To most people, a computer war game looks like a screen full of different coloured blobs and dots. To a war game enthusiast, this same screen is his deadly army of highly trained killers. Perhaps someone should consider marketing special glasses that allow normal computer users to see the same thing on their screens. Have you also noticed war games seem almost impossible to play?

SPORTS ENTHUSIASTS: How can wiggling a joystick forwards and backwards as fast as possible be classed as a realistic sports game? Wiggling a joystick while performing a real sporting event won't help you much, so why on earth does it in these games? Football managerial games also seem slightly different to real life. If a football manager's job really consists of the same thing, and is really that easy, then maybe some people are in the wrong job?

LET'S BE SERIOUS

Of course, games players aren't the only people that use computers. Many people use their computers for more serious(?) uses. Here is a look at some of the programs these people use.

WORD PROCESSORS: Why do people use these things. It is usually only after they have written an entire document on the computer that they realise that they could have hand written the document in a third of the time. It may not have been so neat, but who cares when your writing a letter to Auntie Florence? And why does the letter that you drafted out first on paper, always end up printed as a tiny letter in the middle of an A4 piece of paper?

DATABASES: This seems at first to be one of the good ways of using a computer. It is only after storing your entire list of addresses and telephone numbers on disk, that you either loose the disk or realise that it is quicker to look for the address in an address book, rather than loading the database into your computer?

SPREADSHEET: What a gréat idea storing your accounts on computer seems. That is until you misplace your spreadsheet disk (along with your database disk?), and can't access your accounts. Never mind, you can go through the entire process again and again, forgetting that the same thing is bound to happen again. And we all know that it probably will.

COMMUNICATIONS PROGRAMS: Why not use your computer to reserve cinema or theatre tickets? Because you could have made a normal phone call a lot more quickly and cheaply to do the same thing, that's why!!!

TYPISTS

Of course, the people that create most of these strange computer owners are the programmers that write the programs in the first place. These people can also be split into different groups.

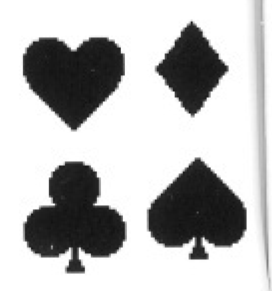
BASIC PROGRAMMERS: These people just aren't understandable. They sit for hours creating and typing in a program, and then either find numerous bugs in it, or decide that they could have written it a lot better and start again.

MACHINE CODE PROGRAMMERS: What on earth are all of those numbers meant to mean? And how are people meant to understand how a machine code program works? Do the programmers know how it works, or do they just type screens of numbers to annoy those of us that just don't know how to program in machine code?

PEOPLE THAT TYPE IN PROGRAMS FROM BOOKS AND MAGAZINES: These people are terrible. Their programming ability consists of changing the words in the REM statements and pretending that they wrote the program. What is worst of all is that these people eventually become the types of programmers listed above.

After all of this negative outlook, just why do we use computers? I don't know either but we all use them and we wouldn't be without them, would we?

PONTOON



by Ann O'Driscoll and Phil Cardwell

The aim of the game is to get a total of 21, or as near as possible to 21 without exceeding it, with 2 or more cards. Number cards count at face value, aces are worth 1 or 11 and picture cards are worth 10. You win if you finish with a better hand than the Atari, who acts as dealer and banker.

Special hands are PONTOON (21 with 2 cards) and 5 CARD TRICKS (any hand of 5 cards of 21 or under). You bet on the basis of the first card dealt to you. After that you can BUY a card for the same stake, TWIST a free card or STICK with the hand you have. The game ends when you run out of chips.

USING THE PROGRAM

The dealer's cards are shown on the top half of the screen and your cards appear underneath. Two cards are dealt initially - One for the dealer (face down) and one for you (face up). The first thing you must do is place a bet: You are given 20 chips to start with, and you may bet 2, 3, 4 or 5 chips depending on the value of your first card. The default stake is set at 2 chips. Move the arrow with the joystick and press fire to raise or lower the stake; move the arrow over "play" and press fire to place your bet. You are then dealt a second card (face up) and the dealer gets another card too (face down). At this point you may either "twist", "stick" or "buy". Again, you select your option with the joystick. The program will tell you if you try to make an illegal move - For instance, you can't "stick" if your score is under 16, and you can't "twist" if your score is under 12. If you opt to buy another card, the amount you pay will be equal to the initial stake for the round. You can continue buying (if you have the chips) or twisting more cards until you are happy with the hand you have. Two things to note here are that you can't buy after twisting, and, if you are going for a five card trick then you must twist the final card. If your score exceeds 21 you are "bust" and the dealer wins the amount you have bet, without showing his cards.

Play passes to the dealer when you have a pontoon, a five card trick, a score of 21 or if you stick on a score of under 21. The dealer may stick on any score over 15 and he "pays" on one more than the value of the cards he holds. For example, if the dealer's score is 18, he pays on 19 or better, so if you have 19, 20 or 21 you win an amount equal to your total bet; you get your own outlay back too.

A "Pontoon" is the best hand to get, as it can only be beaten by a dealer's pontoon. In keeping with the original card game, the only time the cards get reshuffled is after a pontoon and there is a short delay when this takes place. Finally, it is hoped that you will find PONTOON as enjoyable to play as it was to program - Even though it is a simple game you may discover that it can prove to be quite addictive at times.

```
HY 10 REM *****************************
RY 20 REM *         21 PONTOON 21     *
KG 30 REM *             by            *
TJ 40 REM *      Phil Cardwell &      *
ET 50 REM *       Ann O'Driscoll      *
CV 60 REM *---------------------------*
JQ 70 REM * NEW ATARI USER - DEC 1993 *
IF 80 REM *****************************
ZX 100 DIM CC$(1024):GOSUB 1690:GOSUB 189
   0:GOSUB 1550:GOSUB 1600
AX 110 PDLI=1623:PMMOVER=1536:HP0=53248:P
   Y0=208:PX0=52
IU 120 SHUF=380:BET=390:PIC=440:PIC2=470:
   CRD=480:SCO=500:SCO2=560:BRO=590:MES=6
   10
MH 130 DIM A$(15),T$(20),C$(97),C(52),S(4
   ),D(7),BL$(3900),M$(39),P$(7),PP$(1),N
   $(13),SU$(28),SUB$(38),PAGCLR$(28)
JB 140 DIM E$(9),F$(9):E$="#$$$$$$$%":F$=
   "*))))))) ("
CQ 150 C$(1,19)="‾▁▁▁▁▁↓←←←←←←←←     r":C$(
   20,32)=C$(7,19):C$(33,58)=C$(7,32)
VB 160 C$(59,84)=C$(7,32):C$(85)="↓←←←←←←←
   ─┼┼┼┼●":N$="▀♥├ ├┤┐╱╲▟▙.":"
UN 170 PAGCLR$="hh▗Lh▗Khh▗M)♥(*rKHP♦fLhdK
   Pt♦":PAGCLR=ADR(PAGCLR$)
IJ 180 FOR N=1 TO 52:C(N)=N:NEXT N:FOR N=
   1 TO 4:S(N)=0:D(N)=0:NEXT N:D(5)=0
MO 190 BL$(1)=" ":BL$(39)=" ":BL$(2)=BL$:
   M$=BL$
BC 200 SU$="ab↓←←cdef↓←←cdij↓←←ghyz↓←←kl"
   :SUB$="mn↓←←mn↓←←mn↓←←←omnp↓←←←←qrst↓←
   ←←uvwx"
WY 210 CLOSE #1:OPEN #1,4,0,"K:"
OQ 220 GOTO 630
QT 230 REM
GW 240 GRAPHICS 0:DL=PEEK(560)+256*PEEK(5
   61):POKE DL+3,68:FOR N=6 TO 12:POKE DL
   +N,PEEK(DL+N)+2:NEXT N
KA 250 POKE DL+12,132:POKE DL+13,130
CJ 260 FOR N=14 TO 20:POKE DL+N,PEEK(DL+N
   )+2:NEXT N
RU 270 POKE DL+21,132
DZ 280 POKE 54286,64:GOSUB 1330:POKE 5428
   6,192:GOSUB 1450
NZ 290 POKE 752,1:POKE 708,42:POKE 709,0:
   POKE 710,28:POKE 712,9
CS 310 POKE PDLI+2,65:POKE PDLI+10,14:POK
   E PDLI+15,245:POKE PDLI+20,68:POKE PDL
   I+25,9
```

```
TL 330 POKE PDLI+43,15:POKE PDLI+51,0:POK
   E PDLI+56,67:POKE PDLI+61,70:POKE PDLI
   +66,9
HZ 350 POKE PDLI+84,65:POKE PDLI+92,15:PO
   KE PDLI+97,245:POKE PDLI+102,68:POKE P
   DLI+107,9
ZL 360 RETURN
RC 370 REM
ZP 380 FOR N=1 TO 100:X=INT(RND(0)*52)+1:
   Y=INT(RND(0)*52)+1:Z=C(X):C(X)=C(Y):C(
   Y)=Z:NEXT N:RETURN
EJ 390 M$="▸     PLACE A BET":POSITION 0,
   19:? BL$:POSITION 0,19:? M$
UI 400 GOSUB 1350
JM 410 BT=BT+(PX0=85 AND BT<5 AND BT<CP)-
   (PX0=115 AND BT>1):POSITION 7,8:? BT
SX 420 POSITION 18,8:? BT:IF PX0<>145 THE
   N 400
LQ 430 AM=BT:CP=CP-BT:POSITION 34,15:? CP
   ;" ":RETURN
XX 440 POSITION X,Y:? C$:SU=INT((Z-1)/13)
   :NO=Z-(13*SU):P$=SU$(7*SU+1,7*SU+7):PO
   SITION X+2,Y+3:? P$
GP 450 PP$=N$(NO,NO):POSITION X+1,Y+1:? P
   P$:POSITION X+4,Y+6:? PP$:IF NO>10 THE
   N NO=10
QX 460 SOUND 0,50,10,8:FOR D=1 TO 20:NEXT
    D:SOUND 0,0,0,0:RETURN
LX 470 POSITION X,Y:? C$:POSITION X+2,Y+1
   :? SUB$:RETURN
YX 480 CC=CC+1:IF CC=53 THEN CC=1
ZS 490 RETURN
ZG 500 S(1)=S(1)+NO:S(2)=S(2)+NO:IF NO=1
   AND AF=0 THEN S(2)=S(2)+10:AF=1
YT 510 IF S(1)>21 THEN M$="YOU ARE BUST":
   POP :GOTO 1140
WJ 520 IF X=0 THEN RETURN
BR 530 MG=1:GOSUB MES:? "YOUR SCORE IS ";
   S(1);:IF S(2)<>S(1) AND S(2)<22 THEN ?
    " OR ";S(2);
GV 540 IF S(1)=21 OR S(2)=21 OR X=30 THEN
    RETURN
HD 550 ? "  WHAT NOW?":RETURN
NM 560 S(3)=S(3)+NO:S(4)=S(4)+NO:IF NO=1
   AND AF=0 THEN S(4)=S(4)+10:AF=1
RM 570 IF S(4)>21 THEN S(4)=S(3)
ZR 580 RETURN
TZ 590 M$="YOU HAVEN'T ENOUGH CHIPS":GOSU
   B MES:POSITION 0,21:? BL$:IF S(1)>11 O
   R (S(2)>11 AND S(2)<22) THEN 790
YW 600 M$="YOU HAVE TO QUIT":GOSUB MES:GO
   TO 1270
ZK 610 POSITION 0,19:? BL$:POSITION 0,19:
   IF MG=1 THEN MG=0:RETURN
CT 620 ? M$:FOR D=1 TO 600:NEXT D:POSITIO
   N 0,19:? BL$:RETURN
XY 630 GRAPHICS 0:POKE 752,1:POKE 709,15:
   POKE 710,144:POKE 712,144:POSITION 10,
   10:? "SHUFFLING CARDS..."
VY 640 POKE 82,0:GOSUB SHUF:CP=20:BT=2:GA
   ME=1:POKE 764,255:GOSUB 240:POKE 756,M
   TOP
LP 650 ? CHR$(125);
RG 660 FOR N=0 TO 9 STEP 9:POSITION 30,N:
   ? E$:POSITION 30,N+7:? F$:NEXT N
SM 670 FOR N=1 TO 10 STEP 9:FOR M=0 TO 5:
   POSITION 30,M+N:? "+":POSITION 38,M+N:
   ? "&":NEXT M:NEXT N
ZP 680 POSITION 31,3:? "PONTOON"
GZ 690 POSITION 32,11:? "ROUND":POSITION
   34,12:? GAME:POSITION 32,14:? "CHIPS":
   POSITION 34,15:? CP;" "
TF 700 BT=2:AM=BT:W=0:AF=0:PF=0:DPF=PF:TF
   =0:F=0:Y1=0:Y2=9:X=0:FOR N=1 TO 4:S(N)
   =0:D(N)=0:NEXT N:D(N)=0
EJ 710 IF CP<BT THEN BT=CP:AM=BT
BI 720 POSITION 1,8:? "STAKE ";BT:POSITIO
   N 11,8:? "AMOUNT ";AM
QY 730 REM
RI 740 FOR NN=1 TO 2:Y=Y2:GOSUB PIC:GOSUB
    SCO:Y=Y1:GOSUB PIC2:GOSUB CRD:D(NN)=C
   (CC):X=X+6
FT 750 IF NN=1 THEN GOSUB BET
UX 760 GOSUB CRD:Z=C(CC):NEXT NN
AO 770 IF S(2)=21 THEN PF=1:M$="YOU HAVE
   A PONTOON":GOTO 950
RI 780 REM
TP 790 GOSUB 1410
PB 800 IF PX0<>145 THEN 850
CB 810 IF TF=1 THEN M$="YOU CAN'T BUY AFT
   ER TWISTING":GOTO 940
WE 820 IF CP<BT THEN GOTO BRO
JW 830 IF X=24 THEN M$="YOU MUST TWIST TH
   E LAST CARD":GOTO 940
BX 840 AM=AM+BT:POSITION 18,8:? AM:CP=CP-
   BT:POSITION 34,15:? CP;" ":GOTO 900
XH 850 IF PX0<>85 THEN 880
NL 860 IF S(1)<12 AND (S(2)<12 OR S(2)>21
   ) AND X<>24 THEN M$="YOU CAN'T TWIST O
   N UNDER 12":GOTO 940
MU 870 TF=1:GOTO 900
AD 880 IF S(1)<16 AND (S(2)<16 OR S(2)>21
   ) THEN M$="YOU CAN'T STICK ON UNDER 16
   ":GOTO 940
SG 890 GOTO 970
MO 900 Z=C(CC):Y=Y2:GOSUB PIC:GOSUB SCO:G
   OSUB CRD:X=X+6
QV 910 IF X=30 AND S(1)<22 THEN F=1:M$="Y
   OU HAVE A 5 CARD TRICK":GOTO 950
ND 920 IF S(1)=21 OR S(2)=21 THEN M$="YOU
    HAVE REACHED 21":GOTO 950
RX 930 GOTO 790
LO 940 GOSUB MES:POKE 764,255:GOTO 790
EF 950 GOSUB MES
RG 960 REM
LE 970 W=0:AF=0:X=0:Y=Y1:FOR NN=1 TO 2:Z=
   D(NN):GOSUB PIC:GOSUB SCO2:X=X+6:NEXT
   NN
LA 980 IF S(4)=21 THEN DPF=1:M$="PONTOON!
   ":GOTO 1140
OG 990 IF PF=1 THEN M$="YOUR PONTOON WINS
   !":W=1:GOTO 1140
YJ 1000 IF S(3)>21 THEN M$="I'M BUST!":W=
   1:GOTO 1140
GV 1010 MG=1:GOSUB MES:? "MY SCORE IS ";S
   (3);:IF S(4)<>S(3) THEN ? " OR ";S(4);
QH 1020 ? " ";:IF S(4)<16 AND X<30 THEN ?
    "THE NEXT CARD IS..":FOR D=1 TO 500:N
   EXT D:GOTO 1120
SI 1030 IF S(4)<22 AND X=30 THEN M$="5 CA
   RD TRICK!":GOTO 1140
AG 1040 IF S(4)<>21 THEN MG=1:GOSUB MES:?
    "THINKING...":FOR D=1 TO 600:NEXT D:I
   F (S(4)-8)/13<RND(0) THEN 1120
VR 1050 IF F=1 AND X<30 THEN M$="YOUR 5 C
   ARDS WIN":W=1:GOTO 1140
BS 1060 IF S(4)=21 OR (X=30 AND S(4)<22)
   THEN M$="TOUGH LUCK":GOTO 1140
CI 1070 M$="I'LL PAY ON ":M$(LEN(M$)+1)=S
   TR$(S(4)+1)
VY 1080 IF S(2)<22 AND S(2)>S(1) THEN S(1
   )=S(2)
HY 1090 IF S(4)<S(1) THEN W=1
FE 1100 IF (S(4)+1<S(1)) OR (S(4)=21 AND
   F=1) THEN W=1
PF 1110 GOTO 1140
YT 1120 Z=C(CC):GOSUB PIC:GOSUB SCO2:X=X+
   6:GOSUB CRD:POSITION 0,21:? BL$:GOTO 1
   000
IH 1130 REM
SB 1140 MG=1:GOSUB MES:? M$;" - ";
PR 1150 IF W=1 THEN ? "YOU WIN ";AM;:BK=B
   K-AM:CP=CP+(AM*2):GOTO 1170
EZ 1160 ? "YOU LOSE ";AM;:BK=BK+AM
ER 1170 ? " CHIPS";:IF AM=1 THEN ? "← "
FL 1180 ? " "
ZW 1190 GAME=GAME+1:POSITION 0,21:? BL$:P
   OSITION 0,21:? "▸       CONTINUE":PX0=1
   15:POKE HP0,PX0:POKE HP0+1,PX0
OG 1200 IF STRIG(0) THEN 1200
PA 1210 PX0=85:POSITION 0,21:? BL$
```

continued

```
DR 1220 IF CP<=0 THEN 1270
PG 1230 GOSUB CRD:Z=C(CC):IF PF<>1 AND DP
   F<>1 THEN 1250
HH 1240 POSITION 0,22:? BL$(1,20):M$="RES
   HUFFLING AFTER A PONTOON...":GOSUB MES
   :GOSUB SHUF
DA 1250 POKE 764,255:GOTO 650
NS 1260 REM  GAME OVER
LS 1270 FOR PX0=19 TO 21 STEP 2:POSITION
   0,PX0:? BL$;:NEXT PX0:PX0=110
KT 1280 POSITION 12,17:? "YOU ARE BANKRUP
   T"
AL 1290 POSITION 2,19:? "▸▸ GAME OVER "
IM 1300 POSITION 10,21:? "PRESS Y TO PLAY
    AGAIN":GET #1,KEY:IF KEY<>89 THEN 132
   0
MX 1310 POKE 53248,0:POKE 53249,0:GOTO 63
   0
AB 1320 GRAPHICS 0:POKE 82,2:POKE 752,0:P
   OKE 77,255:POKE 53248,0:POKE 53249,0:E
   ND
BA 1330 DLI1=INT(PDLI/256):DLI2=PDLI-256*
   DLI1:POKE 512,DLI2:POKE 513,DLI1
AR 1340 RETURN
UK 1350 REM  PM CURSOR → BETTING
GT 1360 PX0=85:M$="▸RAISE▸LOWER▸PLAY":POS
   ITION 0,21:? BL$:POSITION 0,21:? M$
DU 1370 POKE HP0,PX0:POKE HP0+1,PX0:STK=S
   TICK(0):IF STK=15 THEN 1390
WH 1380 POKE 77,0:PX0=PX0+30*(STK=7 AND P
   X0<145)-30*(STK=11 AND PX0>85)
XA 1390 IF STRIG(0) THEN 1370
AH 1400 RETURN
IS 1410 REM  PLAY SCREEN
QQ 1420 POSITION 0,21:? BL$:POSITION 0,21
   :? "▸TWIST▸STICK▸BUY":PX0=85
CH 1430 GOSUB 1370
AT 1440 RETURN
IW 1450 REM  PLAYER MISSILE SET UP
XA 1460 PMB=8*(INT(PEEK(742)/8)-1):PMBASE
   =PMB*256:POKE 54279,PMB
ER 1470 X=USR(PAGCLR,PMBASE,8):RESTORE 14
   90
IV 1480 FOR N=0 TO 15:READ D:POKE PMBASE+
   N,D:NEXT N:FOR N=0 TO 15:READ D:POKE P
   MBASE+20+N,D:NEXT N
JD 1490 DATA 00,64,96,112,120,124,120,120
   ,92,12,14,6,6,0,0,0
XX 1500 DATA 64,160,144,136,132,130,132,1
   32,162,82,17,9,9,6,0,0
MA 1510 POKE 704,14:POKE 705,0:POKE 53256
   ,0:POKE 559,62:POKE 53277,2:POKE 623,0
   :POKE HP0,PX0:POKE HP0+1,PX0
BZ 1520 POKE 53257,0
XM 1530 X=USR(PMMOVER,PMBASE,PMBASE+1024+
   PY0,16):X=USR(PMMOVER,PMBASE+20,PMBASE
   +1024+256+PY0,16):RETURN
WL 1540 REM  PMMOVER DATA
SF 1550 RESTORE 1560:FOR LOC=1536 TO 1622
   :READ BYTE:POKE LOC,BYTE:NEXT LOC:RETU
   RN
RL 1560 DATA 104,201,3,208,81,104,133,225
   ,104,133,224,104,133,227,104,133,226,1
   04,133,229
RX 1570 DATA 104,133,228,169,0,133,230,13
   3,231,168,177,224,145,226,24,169,1,101
QZ 1580 DATA 224,133,224,169,0,101,225,13
   3,225,24,169,1,101,226,133,226,169,0,1
   01,227,133,227,24
BZ 1590 DATA 169,1,101,230,133,230,169,0,
   101,231,133,231,24,165,228,197,230,208
   ,206,165,229,197,231,208,200,96
UI 1600 RESTORE 1610:FOR LOC=1623 TO 1745
   :READ BYTE:POKE LOC,BYTE:NEXT LOC:RETU
   RN
VQ 1610 DATA 72,169,65,141,10,212,141,22,
   208,169,14,141,23,208,169,67,141,24,20
   8,169,68
ZQ 1620 DATA 141,25,208,169,9,141,26,208,
   169,128,141,0,2,169,6,141,1,2,104,64
IC 1630 DATA 72,169,15,141,10,212,141,22,
   208,169,0,141,23,208,169,64,141,24,208
   ,169
AY 1640 DATA 70,141,25,208,169,9,141,26,2
   08,169,169,141,0,2,169,6,141,1,2,104
FA 1650 DATA 64,72,169,65,141,10,212,141,
   22,208,169,15,141,23,208,169,39,141,24
   ,208
KJ 1660 DATA 169,68,141,25,208,169,9,141,
   26,208,169,87,141,0,2,169,6,141,1,2
PN 1670 DATA 104,64
XM 1680 REM  CHARACTER SET
RE 1690 MTOP=PEEK(106)-4
UX 1700 POKE 106,MTOP-4:GRAPHICS 0
TM 1710 D=PEEK(140)+PEEK(141)*256:R=PEEK(
   134)+PEEK(135)*256
PS 1720 Q=MTOP*256-D:R1=INT(Q/256):T=Q-R1
   *256
YJ 1730 POKE R+2,T:POKE R+3,R1
PE 1740 CC$(LEN(CC$)+1)="♥♥♥♥♥♥♥♥♥┴┴┴┴♥┴♥
   ♥fff♥♥♥♥♥♥♥▁♣♣♣♣♥♥♥U♥♥♥♥♥♥♥T┤┤┤┤┤┤┤┤┤
   ┤┤♥┴┴┴♥♥♥♥┤┤┤T♥♥♥♥♥♥♥U♥♥♥"
GZ 1750 CC$(LEN(CC$)+1)="♣♣♣♣▁♥♥♥♣♣♣♣♣♣♣♣
   ♥♥♥♥♥┴┴0♥♥♥(♥♥♥♥♥♥♥♥♥┴┴♥♥/▘┴0♦@♥♥?3333
   ?♥♥▘(▘▘▘?♥♥?3┘?0?♥♥?┘┘?┘?♥"
OV 1760 CC$(LEN(CC$)+1)="♥0003?┘♥♥?0?┘3?♥
   ♥?0?33?♥♥?┘┘┘┘♥♥?3?33?♥♥?3?┘┘?♥♥♥▘▘♥▘
   ▘♥♥♥▘▘♥▘▘</▘┴0┴▘/♥♥♥?♥♥?♥♥"
TF 1770 CC$(LEN(CC$)+1)="♦0┴▘┴0♦♥♥?3┘▗▘♥▘
   ♥(fnn♦)♥♥?33?33♥♥?3?33?♥♥?3003?♥♥<3333
   <♥♥?0<00?♥♥?0<000♥♥?0033?♥"
NZ 1780 CC$(LEN(CC$)+1)="♥33?333♥♥?▘▘▘▘?♥
   ♥┘┘┘┘3?♥♥33?<33♥♥00000?♥♥3??333♥♥?3333
   3♥♥?3333?♥♥?33?00♥♥?3333?▘"
JP 1790 CC$(LEN(CC$)+1)="♥?33<33♥♥?0?┘┘?♥
   ♥?▘▘▘▘▘♥♥33333?♥♥3333?▘♥♥333??3♥♥33▘▘3
   3♥♥33?▘▘▘♥♥?┘▘▘0?♥♥<┴┴┴┴<♥"
OT 1800 CC$(LEN(CC$)+1)="♥@♦0┴▘/♥♥x┴┴┴┴x♥
   ♥◢↑6c♥♥♥♥♥♥♥♥♥▶♥* ||▶*  ** ||▶*|▶*   ▀▀*
   |▶*  * |▶**  *▀▀** ||||||"
HE 1810 CC$(LEN(CC$)+1)="*▀▀*▀▀▀▀**▀▀* ||▶*
   *◢◢◢◢◢◢*◢◢◢◢◢/◤*▌▌▌▌*◢◢/◤◤◤*▌▌▌*▀▀▀▀*▀
   ▀▀♥♥♥**%%$$♥♥*UU♥♥♥♥◀◀XX┴┴"
SN 1820 CC$(LEN(CC$)+1)="$$$$$$$$┴┴┴┴┴┴┴┴
   $$%%**♥♥♥♥UU**♥♥┴┴XX◀◀♥♥♥♥♥▶▶♥♥♥♥♥♥♥→→┴
   ┴┴♥♥♥XX┴┴┴┴┴┴XX♥♥♥PPPPPPPP"
AW 1830 CC$(LEN(CC$)+1)="┴┴┴→→♥♥♥x♦x♦┤┴←♥
   ♥┴<┤┴┴┴♥♥┴┴┴┤(┴♥♥┴0┤0┴♥♥♥┴▘┤▘┴♥♥♥┴<┤┤<
   ┴♥├├┐┐▁▁UU@@PPTTUUUU▁▁┐┐├├"
BX 1840 CC$(LEN(CC$)+1)="UUTTPP@@♥♥♥•TUUU
   ♥♥♥•▁UUU**** ||▶****♥♥♥◀♥ |◣◣**▶♥♥♥ ◀
   ◀***** |▶** ◣◣◣ ♥♥◀◀▀▀▀▀▀▀▀▀▀"
WW 1850 CC$(LEN(CC$)+1)="◣◣◣◣◣◣◣◣◣♥♥♥♥ ||||
   ♥♥♥♥♥♥♥♥ |◣◣◣◣**▀▀▌▌▌ ||◣◣▌▌▌♥♥♥♥ ▀▀
   ◀◀**◀◀◀◀◀◀ |||||| ♥♥♥♥♥♥♥♥"
FP 1860 CC$(LEN(CC$)+1)="◀◀******◣****|▀
   ▀◀◀◀◀♥◣♥┴<┤┤┴<♥┴┴┴┴┴┴┴┴♥┤x|nf/♥◢┴8x8┴
   ◢♥┴┴↑←↑┴←♥"
OA 1870 RESTORE 1880:FOR A=1 TO 17:READ B
   :CC$(B,B)=CHR$(34):NEXT A:POKE 756,MTO
   P:RETURN
XQ 1880 DATA 532,533,550,551,562,563,565,
   566,567,570,571,610,611,612,614,615,61
   6
IW 1890 GRAPHICS 0:X=USR(ADR("h0 hK-1 hL
   ┘)D hK/)H hKH@↓hYh♦")):POKE 756,MTOP
OQ 1900 POKE 708,42:POKE 709,0:POKE 710,2
   8:POKE 711,70:POKE 712,9
JI 1910 DL=PEEK(560)+PEEK(561)*256
NT 1920 POKE DL+10,5
GW 1930 ? "↓↓↓↓              #$$$$$$$$$$$$$%"
YM 1940 ? "                 +21 PONTOON 21&"
AQ 1950 ? "                 *))))))))))))))("
ZT 1960 POSITION 8,2:? "mn↓←←mn↓←←mn↓←←←o
   mnp↓←←←←qrst↓←←←←uvwx"
OP 1970 POSITION 29,2:? "mn↓←←mn↓←←mn↓←←←
   omnp↓←←←←qrst↓←←←←uvwx"
DV 1980 ? "▸         PROGRAMMED BY"
OA 1990 ? "  PHIL CARDWELL AND ANN O DRIS
   COLL"
AA 2000 RETURN
```

COMPUTER GEEK?

Ever bought something for your Atari that you didn't really need but for some reason just had to have? Gordon F. Hooper knows the feeling

I think I'm turning into the much-dreaded computer geek. It started with an innocent trip to a computer store, just to look around. As president of a computer users group, I feel it's necessary for me to keep abreast of what's happening in the computer world. But there should be no legal way for me to enter these places, the same as liquor stores. I cannot go in either without buying something, to the detriment of my wallet, not to mention my liver.

At any rate, I was looking around the computer store at all the IBM products, which are useless to me with my 8-bit Atari, when I spotted what was called a power centre. This is basically a power bar and does the same thing, except that it sits under your monitor and has a lighted rocker switch to turn on and off each individual component of your computer system.

The thing which caught my eye was the rocker switches, each of which had an LED in it. Under each switch was a label, COMPUTER, MONITOR, PRINTER, AUX1 and AUX2. There was also one labelled MASTER. You can imagine my delight when I found that pushing each switch caused an LED to come on.

I guess this fascination comes from growing up watching Star Trek when it originally aired. I mean the real show, with plywood sets, people who couldn't act and lots of flashing lights. You'd think after 25 years of trying they would have learned how to act, but after viewing Star Trek VI, the only thing they learned was how to go grey and get fat. Anyhow, I grew up thinking that anything that had flashing lights was new and exciting and a harbinger of the future. A display of LED's puts me into immediate ATTRACT/EXTRACT mode. The lights attract my attention and make it much easier for the salesperson to extract the money from my wallet.

51 dollars and 87 cents later, I was the proud owner of my very own power centre, which I needed about as much as the Queen needs another son getting married. This couldn't be considered one of my more astute moves seeing as how it did the same job as my existing $9.95 power bar, but it sure did look great after I set it up. The problem came in setting it up.

The desk my computer sits on was built by my favourite uncle when I was in Grade 5. It always was a nice desk, but as my computer-geekdom grew, I had to build small extensions on either end to house my ever-expanding computer system. Every component you add has it's own power cord. Now that I have a computer, monitor, amplified speaker, two disk drives, a modem, two printers and an XEP80, there's a lot of wire behind that old desk. And I mustn't forget the power centre which originally caused the problem. It too has its own cord.

I don't know how a perfectly straight cord which you run from the individual item to a wall plug or power bar can magically become tangled up with every other cord back there, but it looked like a deranged mating ritual of singularly horny snakes behind my dear departed uncle's desk. The poor old guy would have been shocked.

Given that I couldn't move the desk because of the extensions I built on either side, how was I going to get the wires from the floor up to desktop level to plug them into the power centre? For that matter, what the hell am I going to do when when I have to move? I guess I'll just have to sell the house minus my computer room, and remain holed up there for the rest of my natural life.

Being a budding computer geek, I tried to think of a high tech way to sort out the wires, but ended up using that venerable old standby, the metal clothes hanger. I unwound it, straightened it out and put the plug end of the components wires onto the hooked end of the clothes hanger to lift them up. I bet somewhere along the way even Stephen Jobs used the ubiquitous coat hanger in the process of making the first practical home micro-computer. Probably he ran out of wire at 4 am one morning and pressed the coat hanger in as a substitute. I know I made an emergency electrical repair with one on my car late one night. You don't want to know what the clothes hanger was doing in my car, why I was out late at night, or why I'm now spending time at the library looking for information on STD's.

After everything was connected and I had gloated for half an hour about how impressive the lights looked while pushing the switches on and off, I sat down at the computer to write a letter to William Shatner asking for advice on how to overact. When I finished, I wanted to turn off the printer and use the other one, so with a quick glance at the power centre, I pushed the switch. Oops. It was the COMPUTER switch I turned off. Too bad I hadn't saved it to disk. After swearing for a few minutes, I realized if I had been satisfied with the original power bar this couldn't conceivably have happened. Trust me to come up with a brilliant new way to lose data that costs money. That must be the reason they made me president of a computer club.

Oh well, I guess I'll go out and trade in my glasses for the horn-rimmed variety and buy a plastic pocket protector so pens won't stain my shirt. Maybe I'll even go whole hog and buy a bow tie so that I look like that ultimate computer geek, an IBM owner.

WRITE PROTECT SWITCHES

Steve Whiteley from Western Australia presents a fairly simple modification to your drive that anyone who can use a soldering iron should be able to do

This project is for anyone who owns an Atari 1050 or 810 drive, and does not have a switch to enable disk write to any disk. I know what a pain it is to have to cut notches in the disk so you can write to the back of it, or write on a disk with the notch covered, so here's how to install a switch to remove the tiresome task of cutting or opening notches. I do not accept any responsibility for damage incurred while fitting these switches, but I have fitted them myself without any trouble.

COMPONENTS

The components you will need are

1 D.P.D.T. toggle switch
1 small red LED
1 small green LED
about 10 inches of 3 strand wire
1 soldering iron + solder
1 resistor (colour band - red, blue purple, gold - for the 810)
other lengths of wire as needed

810 INSTALLATION

I should mention before you begin that you will need to find somewhere to place the switch and LEDs. Work this out first so you will know the lengths of wire you will need.

1. First open up the top of your 810 drive and locate the side circuit board to the left. At the rear of the board locate the two connectors going in. We will be dealing with the first connector, which should be coloured brown. If it's blue you have the wrong one. You will notice that there are 5 wires to the connector.
2. Now you will have to locate the solder pads on the other side of your circuit board corresponding to the connector and solder one strand of wire to pad 1 (top), another strand to pad 4 and another to pad 5.
3. Take the switch and solder the end of the wire from pad 1 of the circuit to pin 3 (bottom) of the switch, pad 5 to pin 2 (middle), and pad 4 to pin 1 (top).
4. You now have write enable/disable in your drive. Have a test (try writing with and without a notch in a disk, and make sure that to write to any disk the switch is down). If you wish to continue and fit LEDs come on back.
5. Back so soon? Right, now when I refer to the 'other' pin "x" (on your switch) I mean the side that you haven't as yet used.
   You will need to solder one end of the resistor to pin 1 (top) of your switch, on the same side that goes to pad 4 - this gives power to the LEDs. Solder the other end of the resistor to the other pin 2 (middle).
6. Solder a wire to the other pin 1 (top), and another wire to pin 3 (bottom), and test your red LED on these wires so you know which way to solder it. To test your LED (turn on the power to the drive of course) simply push the switch down and it should light up, if it doesn't then reverse the wiring to the LED and it should work.
   If you still have problems then re-check the previous wiring. Solder the red LED to those wires once you have the correct connections.
7. Solder a wire to the other pin 3 on your switch, and another wire to pin 3 (corresponding to pad 1), and test the green LED on these two wires (flick the switch up and it should light up). If all is well, solder the wires to the LED and position it where you want in the drive.

There you have it, one write protect/enable switch fitted with LEDs

1050 INSTALLATION

For the 1050 you need the same equipment as for the 810 except the resistor.

1. First unscrew and remove the top half of your 1050 (be

careful, just tilt it up and down until it comes away).

2. Locate the connector block which is at the back left just inside the heatsink. The first two connectors have two wires each and should be blue-white, and white-red (if they are all white don't worry, you can still do this, just do one wire at a time). These are for the write notch infra-red LEDs. What we are going to do with the switch is short out (not burn out though, so don't worry) the bottom IR LED so that the drive thinks the disk has a notch.

3. If you want to do it the easy way then pull out the first connector (blue-white wires), cut the two wires so you have enough either way to solder another wire to each. Solder them back together (with the additional wire free) and cover with electrical tape.

4. Solder the wire you have joined to the blue (or first) wire to the pin 2 (middle leg) of the switch.

5. Solder the wire you have joined to the white (second) wire to pin 1 (top) of the switch.

6. Re-insert the connector and pull out the next one (should be the white-red wires).

7. Cut the red wire, (if the wires are all white, cut the second one, ignore the first wire) and, in the same fashion as before, join a wire to the bare ends, re-join the wires and re-insert the connector. Solder the other end of free wire to pin 3 (bottom leg) of the switch.
   You should now have a working write protect/enable switch so go and test it then come back and I'll show you how to fit the LEDs in.
   If you want to do the job without cutting and joining wires, you will have to take out the inner workings so you can access the bottom of the circuit board. Then solder the wires I told you about previously to the solder pads located under the connector pins. (I'm sure that's not as hard as it seems, but just a bit more work).

8. Back again? Right - you now have a working switch, and want some LEDs to show you what's happening. Solder a piece of wire to pin 2 of the LED near the main power switch in the drive circuit, and the other end of the wire to the other pin 2 on your switch. This will power your LEDs when you turn on the drive.

9. Solder a wire to the other pin 3 (on the switch) and find somewhere to run a ground wire from, preferably from the ground wire attached to the drive mechanism on top, and test the green LED on these wires. Once you have it right then solder them.

10. Solder a wire to the other pin 1, and use the same ground wire from the green LED to test the red LED, then solder them accordingly.

Finally find a place to mount them (I'm sure you can work that out) and you should have a good working write enable/disable switch with LEDs.

Make sure that you study each step before you begin and ensure that you have identified the correct components. You should have no problems with this simple modification but remember that neither New Atari User nor the author accept any responsibility should any problems arise. Proceed at your own risk but have fun with it!

A NEW MAPPING TH

With Mapping The Atari long out of print XL/XE programmers have had to struggle for a good reference book but the Tyne and Wear Atari Users Group hope to remedy this situation by publishing a new guide to the XL/XE sometime next year. To whet your appetite we present a few extracts from the book written by Andy Thompson.

Welcome to a few small extracts from the new programming book being created for your XL/XE. The book is not yet titled but is heavily based upon Mapping the Atari - REVISED by Ian Chadwick. It has corrected most (perhaps all) of the incorrect information and errors from that book and, in addition, there is a fair bit of information that is just not covered in Mapping. In addition to the MAP section, you will find an XL/XE Operating System source listing with descriptive remarks alongside and there are several appendices that I hope will expand your knowledge and be readily available for future reference. Most of the information in the MAP section that references other sources in Mapping, you will find amongst the appendices.

At the time of publication of this article, the book hasn't been completed but we do hope to have it ready by Christmas (if all goes well) or early in the New Year. The title and price have yet to be decided but keep in touch with TWAUG or PAGE 6 and you should find out soon enough.

Without further ado, let us embark on the extracts I've promised you.

MISSING INFORMATION

As a simple example of information missing from Mapping, take the following locations:

88,89 58,59 SAVMSC

The lowest address of screen memory corresponding to the upper left corner of the graphics/text screen. The upper left corner of the text window is at locations 660 and 661. You can check this with:

```
10 GRAPHICS 1
20 SCREEN=PEEK(88)+256*PEEK(89)
30 WINDOW=PEEK(660)+256*PEEK(661)
40 POKE SCREEN,51:POKE WINDOW,55
```

How is each mode configured? Well, take a look at the following chart:

GRAPHIC MODE	ROWS full	/split	COLS /line	BYTES /line	SCREEN MEMORY	DL MEMORY
0	24	20	40	40	960/960	32/na
1	24	20	20	20	480/640	32/34
2	12	10	20	20	240/400	20/24
3	24	20	40	10	240/400	32/34
4	48	40	80	10	480/640	56/54
5	48	40	80	20	960/1120	56/54
6	96	80	160	20	1920/2080	104/94
7	96	80	160	40	3840/4096	104/94
8	192	160	320	40	7680/7936	202/176
9	192	160	80	40	7680/7936	202
10	192	160	80	40	7680/7936	202
11	192	160	80	40	7680/7936	202
12	24	20	40	40	960/1120	32/34
13	12	10	40	40	480/640	20/24
14	192	160	160	20	3840/4096	202/176
15	192	160	160	40	7680/7936	202/176

Note, that the first number in the Screen memory is the amount of memory actually needed, where the second number defines the amount set aside due to handler calculations and boundaries. The first DL number is the amount of full-screen instructions, the second being the split-screen amount. When the screen clear function is executed the display handler clears the memory between the address given by SAVMSC and RAMTOP. The old bug of RAM being cleared above RAMTOP with the Screen-CLEAR function and the scrolling of the text-window has now been eradicated, so feel free to protect RAM directly above RAMTOP without any worries of it being lost. SAVMSC and RAMTOP can also be used in your own programs to clear blocks of memory fast. This is especially useful in

HE ATARI?

> **INTERESTED?**
>
> TWAUG hope to be able to publish the book, which is likely to run to 250 pages, at around £12 which is a remarkable price considering the small size of the target market and the limited resources of a user group. If you are interested in obtaining a copy, write to David Ewens at TWAUG, P.O. Box 8, Wallsend, Tyne & Wear, NE28 6DQ to express your interest. Your response will enable TWAUG to consider the likely sales and so publish at the best price.

clearing PMG's or strings, as in the following program:

```
10 POKE 88,0:POKE 89,40
20 POKE 106,PEEK(106)
30 ? CHR$(125):GRAPHICS 0
```

This clears all the memory from location 10240 (40 * 256) to RAMTOP - 1. Be sure to call a graphics mode afterwards so that the screen write address is returned to normal.

LOADING PICTURES

Here's a useful routine that can be included in your own programs. It will load a picture file into the Graphics mode in use:

```
10 GRAPHICS 15+16:MEM=7680
20 DATA 104,104,104,170,76,86,228
30 FOR I=0 TO 6
40 READ D:POKE 1536+I,D:NEXT I
50 HI=INT(MEM/256):LO=MEM-HI*256
60 OPEN #1,4,0,"D:FILENAME.PIC"
70 POKE 849,1:POKE 850,7:POKE 852,PEEK(88):POKE
853,PEEK(89)
80 POKE 856,LO:POKE 857,HI:POKE 858,4
90 X=USR(1536)
95 CLOSE #1
```

If you wish to save the picture to disk, then you ... well you'll have to check the book where you'll also find additional instructional information - for all programs. I'm not going to give it all away!

As you can see, all of the XL/XE graphics modes are covered. There are various other locations throughout the book that also support all 16 modes, of course.

CLARIFICATIONS

Another feature is the clarification of many locations by extra program listings, such as:

186,187 BA,BB STOPLN

This is the line where a Basic program stopped either due to an error or the use of the Break key, also when a Basic STOP command is encountered or where a TRAP statement occurred. Try the following:

```
10 TRAP 30
20 ;this is a deliberate error
30 LINE=PEEK(186)+256*PEEK(187)
40 ? "Are you aware of error ";PEEK(195);" at line ";LINE
50 TRAP 40000
```

I believe that subjects are best explained with small straightforward Basic programs, rather than complex, badly written paragraphs of the English language. The TRAP 40000 statement above simply turns off the Error TRAPping mode.

SCARCE STUFF

How about subjects that you don't see in the majority of manuals? Well, good fortune has come your way because here is a description of the hardware timers. When were these last detailed?

The **HARDWARE-TIMERS** are used to count intervals less than a jiffy (1 fiftieth of a second). They count down from a user set value until they reach 0 whereby they vector to the appropriate address. These are very handy for many applications including music duration, game I/O clock, colour alterations, timing and even digitized speech (see the VOLUME-BIT appendix). Oh dear, I've told you one of the appendices in the book.

Here's a program that uses hardware timer 1:

```
10 POKE 53768,0
20 FOR I=0 TO 12
30 READ D:POKE 1536+I,D:NEXT I
40 DATA
173,10,210,41,240,141,10,212,141,24,208,104,64
50 POKE 528,0:POKE 529,6
60 POKE 53760,30
70 POKE 16,193:POKE 53774,193
80 POKE 53769,1
```

It's nice and easy when you see the Basic program that performs the task isn't it? Here are the steps to creating a similar program yourself:

1. POKE AUDCTL with the clock frequency you wish to operate in: 0=64KHz, 1=15KHz and 96=1.79MHz. The PAL system actually works at 2.217MHz, but it seems that POKEYs IRQ' are strapped to this strict timing circuit! (It doesn't seem possible to disable POKEY's internal clock for faster processing IRQ).
2. Mapping says to set the channel control register at 53761, to what and why it doesn't say, but when I was fiddling around with it I found that it has no use at all!
3. Place your machine-language interrupt routine into a safe part of memory making sure it ends with a PLA and RTI. Note that if you use the X or Y registers then you should PHA them and restore them at the end of the interrupt.
4. Address your routine with the appropriate Timer-vector.

5. POKE a value between 0 - 255 into the relevant AUDF register. This is the delay (in clock-pulses) before the interrupt routine is re-executed. You should be very careful with this value because if it is shorter than the amount of time your interrupt-routine needs to fully execute then you are dicing with trouble. The system can CRASH.

6. Enable your interrupt by setting its bit in IRQEN at 53774 and its shadow POKMSK at 16.

7. Finally, POKE a non-zero value into STIMER at 53769 so that your counter (the AUDF register) is reset to the value you poked here in step 5.

I wasn't going to include these steps in this extract, but because IRQs are a lesser known feature of the Atari, I feel that more advanced programmers might find it interesting.

TRYING TABS

Moving onto another subject, and indeed another set of locations, we have:

675-689 2A3-2B1 TABMAP

Map of the TAB-stop positions. There are 15 bytes (15*8 = 120 bits), each bit corresponds to 1 column in a logical line, where a value of 1 means the TAB is set and a 0 means otherwise. If you wish to clear all the TAB stops then you can either POKE all these locations with 0 or press the TAB key to land on each tab-stop and press CTRL+TAB. Likewise, if you wish to create a tab then position the cursor where you want the tab-stop and press SHIFT+TAB (or POKE the appropriate bits in). Try the following program.

```
10 DIM C$(8)
16 DATA 128,64,32,16,8,4,2,1
22 FOR I=1 TO 8
28 READ D:C$(I,I)=CHR$(D):NEXT I
34 FOR J=1 TO 15
40 POKE 675+(J-1),0:NEXT J
46 FOR TAB=1 TO 120 STEP 3
52 GOSUB 70
58 NEXT TAB
64 STOP
70 BYTE=(TAB-1)/8
76 BIT=((BYTE-INT(BYTE))*8)+1
82 V=ASC(C$(BIT,BIT))
88 BYTE=INT(BYTE)
94 POKE 675+BYTE,PEEK(675+BYTE)+V
98 RETURN
```

You can use this program to set any TAB positions you wish. The GOSUB routine between lines 70 - 98 actually sets any TAB stops given to it by the TAB variable (columns are between 1 - 120).

LOADING / SAVING FONTS

How about those 9 sector disk fonts etc. that various character editing packages load and save. Well, the routine to save your font is:

```
0 DATA 104,104,104,170,76,86,228
1 FOR I=0 TO 6
2 READ D:POKE 1536+I,D:NEXT I
3 OPEN #1,8,0,"D:NAME.FNT"
4 POKE 849,1:POKE 850,11:POKE 852,0:POKE
853,PEEK(106)
5 POKE 856,0:POKE 857,4:POKE 858,8
6 X=USR(1536)
7 CLOSE #1
```

With this program, having created a font in Basic, you can save it to disk as a 9 sector font file. If you'd like to load it back in, then I'm afraid you'll have to get the book. Darn, ain't I a spoil sport!

GRAPHICS IN MACHINE LANGUAGE

A nice subject that isn't made clear much is calling graphics modes in machine-language. It's all done with CIO. Just set the various parameters, JSR to CIO and there you have it. Well, you could create your own Display List (DL) and change the DL pointer at locations 560 and 561, but that's the cowboy method, I certainly don't do it that way ... definitely NOT! Hmmm!

```
10 DIM A$(32)
14 A=ADR(A$):H=INT(A/256):L=A-H*256
20 FOR I=1 TO 32
30 READ D:POKE A+I-1,D:NEXT I
50 DATA 112,112,112,66,64,156,2,2,2,2
60 DATA 2,2,2,2,2,2,2,2,2,2,2,2,2,2,2
70 DATA 2,2,2,2,65,0,0
80 POKE A+30,L:POKE A+31,H
90 POKE 560,L:POKE 561,H
```

Don't copy me, here's the PROPER method:

```
0100                *=$600
0110 ;
0120 CIO            = 58454
0130 COMMAND        = 834
0140 BUFFER         = 836
0150 AUX            = 842
0160 AUX2           = 843
0170 ;
0180                LDX #32
0190                LDA #3              ;OPEN
0200                STA COMMAND,X
0210                LDA #24             ;CLRSCRN
0220                STA AUX,X
0230                LDA #8              ;MODE
0240                STA AUX2,X
0250                LDA #NAME&255
0260                STA BUFFER,X
0270                LDA #NAME/256
0280                STA BUFFER+1,X
0290                JSR CIO
0300                BRK
0305 ;
0310 NAME           .BYTE "S:"
```

Who wrote that program I hear you say, can't have been me! Anyway, how about drawing in machine-code? It's nice and easy in Basic because Basic has supplied us with PLOT and

DRAWTO, but for machine-code you'll need further information from the book. Shall I give you a clue...? Well, it's all to do with locations 84, 85, 86, 96, 97 and 98. You might also need a CIO code 17.

ROM INTO RAM

Location 54017; D303 in Mapping supplies a good program which turns your ROM OS into a RAM OS. Well, how about the internal Basic ROM and the SELF-TEST package? Here's a program that will turn your ROM SELF-TEST to a RAM SELF-TEST:

```
10 DATA 173,1,211,41,127,141,1,211
12 DATA 169,80,133,204,169,40,133,206
14 DATA 169,0,133,203,133,205,160,0
16 DATA 177,203,145,205,200,208,249
18 DATA 230,204,230,206,165,204,201,88,208,239
20 DATA 173,1,211,9,128,141,1,211
22 DATA 169,40,133,204,169,80,133,206
24 DATA 169,0,133,203,133,205,160,0
26 DATA 177,203,145,205,200,208,249
28 DATA 230,204,230,206,165,206,201,88,208,239
30 DATA 104,96,-1
40 I=0
50 READ D:IF D+1 THEN POKE 1536+I,D:I=I+1:GOTO
   40
60 X=USR(1536)
```

Occupied SELF-TEST memory is locations 20480-22527; $5000-$57FF. You can also do the same to the Basic ROM with this program, as described earlier, but you'll have to see location 54017 for the modifications.

SPLIT FONTS?

Another subject which I believe has not been described in any other source to date, is that of the SPLIT-FONT mode. A very powerful technique that I originally discovered some years ago.

```
10 GRAPHICS 0
20 DL=PEEK(560)+256*PEEK(561)
30 POKE DL+3,2+32+64:POKE DL+7,2+32
35 POKE DL+9,2+32
40 POKE 54277,4
45 ?
50 ? "Y+fa+/2*E*F3SHMSSkYYAO11QK4/H"
60 ? "sX[OTD/xCIEOsLWDOLZ7A#1T&O44P"
```

I'm not going to tell you what happens, just type in the above program and RUN it up. The book doesn't really go into what you can do with this new mode, but I'm sure the possibilities are endless. Italicization can be achieved by including HSCROL on one of the lines.

That covers just a few of the many pages within the **MAP** section of the book but, of course, every independent memory location has been described. Amongst the appendices there are accurately descriptive tables detailing memory usage of graphics modes and their DL's, detailed timing considerations for both the PAL and NTSC systems, various reference appendices including Basic keywords, Turbo Basic keywords, character-codes, system errors, etc. There are a few fully explanatory appendices on subjects such as Display Lists (DL's), Display List Interrupts (DLI's), Vertical Blank Interrupts (VBI's) etc. Other varied appendices include information on PMG's, the BOOT process, 130XE memory management, LSB's and MSB's, Boolean programming, Boundaries, POKEY in STEREO, the list does go on.

THE APPENDICES

If you are a music fanatic, then you'll find a fairly powerful Turbo Basic program in the relating appendix which will allow you to create good quality Basic musix. The program itself is only 20-25 lines, but believe me, it can accomplish many aspects of channel and timing control. Also you will find that the amount of data needed for complex tunes is very small compared to many simple musix routines.

If you are searching for all the information that will enable you to write your own programs to a boot-disk, then consult the **BOOT** appendix. The **CYCLE-STEALING** appendix will be useful to more advanced programmers, as will be the **MACHINE-CODE** reference appendix. Here, advanced programmers will find some information not listed anywhere before in any book or magazine (as far as I know). The nearest I've seen to some of this information was in an issue of MEGA MAGAZINE, an excellent resource for programmers. There was an article on ILLEGAL OP-CODES, but it missed out some important information. You'll have to see the book for further details.

DOS 2.5 users will be happy to see a *complete* list of correct routine addresses, inclusive of DOS 2.0. Mapping gave a good list for 2.5, but it was not as complete as DOS 2.0. The 130XE memory management appendix in Mapping I thought was hard to understand, so after many hours of working out how the 130XE does this, I've tried to give a more clear explanation. Another means of reference is the appendix of **FREE BYTES** inside your machine. Here's a detailed description of every free byte you can use depending on the programming environment your in. Two very informative appendices you might find useful are to do with **GRAPHICS MODES** and, specifically, graphics modes 12 and 13. A good use for graphics mode 12 is the classic game BOULDERDASH, but more about that in the book.

As explained earlier, DL's, DLIs and VBIs are covered. Three very important subjects for programmers wishing to improve the quality of their programs. The **DLI** appendix brings its power to the average Basic programmer, it's more like a tutorial than anything else. Inclusive of this, there's an additional few pages on overcoming problems with **DLI's**, that will help you get rid of unwanted glitches etc.

On that note we'll bring this extract to an end. I am sure that the book will be of use to all levels of programmers, and of invaluable reference, and it might be just what you want to advance your programming. The book includes a vast amount of correct information in one source. All other sources of any quality and accuracy are out of print, so I hope that there will be a market for a new book. This book may be THE book of reference, as was the original Mapping the Atari in its day. If it is out for Christmas it will make the ideal Christmas present otherwise it will set you up for a year of new programming challenges in 1994.



DOUBLE DISKS WITH NO TROUBLE!

A couple of neat little tips from Patrick O'Really from Derry - If you turn your disk drive upside down you don't have to flip your disks over to use the back side and if you cut a notch on the left side of the disk you can see through the notch whichever way you hold the disk!

Just like the good Doctor, the Tipster occasionally undergoes a metamorphosis and I have found myself a new hairpiece and some trendy glasses hoping to bring a new, younger, image to this column. Well I'm now back and ready to go. The letters and tips have been a little thin on the ground this time because I am sure that you were getting fed up with that crotchety old guy in bed (besides I thought I might die if I stayed like that!) but those letters that have come in are, as always, greatly appreciated and, of course you will want to send in more now that I have this new, suave, persona, won't you?

What I do need are people to send me maps and hints for adventure games as I haven't had a complete solution for a very long time indeed. So come on and get sending them in!

Enough of this frivolity and on with the bit that counts.

A MIGHTY THREESOME

To start with the codes for **TARKUS AND THE ORBS OF DOOM** are as follows (yes, I know it has only just been released so buy it first then come back when you are stuck)

B - Hull	**J - Earth**	**R - Dolan**
C - Screen	**K - Crime**	**S - Green**
D - Atari	**L - Duster**	**T - Stripe**
E - Shoes	**M - Towel**	**U - Crate**
F - Socks	**N - Brian**	**V - Bitter**
G - Credit	**O - Nice**	**W - Digit**
H - Block	**P - Purple**	**X - Salad**
I - Water	**Q - Record**	

SIX OF THE BEST

(who's been a naughty boy then?)

Mr L. Lai of West Drayton has sent in 6 tips for you to enjoy.

SPEED ACE

When racing press the pause key (either SELECT or OPTION he's not quite sure) and hold the joystick forward to increase speed. Hold down for 40 seconds, then let go of pause. Speed automatically increases to 192 m.p.h. Do this when you start and when you crash.

GAUNTLET

(Cassette users only). Get as far as you can and note down the cassette number. When you next play, load as normal, but when the tape stops forward it until you get to the number you last wrote down, use the level one cheat to get to level 8. So when the tape loads it will go from the last level you left off at.

SPACE RIDER

(or Jet Pack Space Rider): Press OPTION and START to get infinite energy.

GHOSTBUSTERS

To get money easily, start with the cheapest car, the ghost bait, two traps and P.K.E. meter. When you get to ZUUL move the character to the left hand side of the door. When marshmallow man jumps from the right to the left, push up immediately. You should be able to get both players through the door if this procedure is used.

PROTECTOR

When playing the computer let the computer get all the parts to the bomb. When he drops it in his own base pick it up, drop it in your own base then recharge, and kill the computer.

DECATHLON

When playing against the computer in any race go slow as the computer will respond by going slow for you to catch up. When you are near the finish sprint to the line and you will overtake him.

QUICKIES

HAWK QUEST

The way to get three easy flags is to drop ground bombs all the time until you get three flags. Thanks go to Sam Wilde from Gorran Haven in Cornwall for that tip for Hawk Quest.

Gem Warrior

All right, all right so I haven't got the promised maps but next time I promise - just got to find them - sorry!!

THAT CUTE LITTLE FELLOW

This cheat from Daniel Baverstock of Brighton is for that old favourite **ROCKFORD**. He says that he saw another similar cheat for the game in a previous edition but his one is slightly different. If you start the game by pressing fire or START, then pause it using SELECT, and then press RESET, when you start the game again you will have frozen the clock, allowing for unlimited time to complete each level.

Faithful Kevin Cooke of Exeter has come up trumps again by providing help with **TARKUS AND THE ORBS OF DOOM**, **SOCCER** (Thorn EMI) and some codes for **THE CITADEL**.

SOCCER by Thorn EMI is easier if you get the ball and make sure that you keep kicking in front of you as running with it will slow you down.

The codes for **THE CITADEL** are not complete and as such only go to level 23 (Kevin hasn't got any further - yet!)

1 - -----	9 - MAGIC	17- GENIE
2 - SPACE	10- ZEBRA	18- STORM
3 - CLOUD	11- DREAD	19- SOLAR
4 - ALPHA	12- BLAST	20- TRITT
5 - KAPPA	13- SWORD	21- TIGER
6 - IMAGE	14- CYBER	22- VIDEO
7 - SUPER	15- RINGS	23- HYDRA
8 - PANIC	16- PLUTO	

HELP TIME AGAIN FOLKS

Sam Wilde needs help on **ALTERNATIVE REALITY - THE DUNGEON**. He can't answer the Gargoyles questions but more importantly he can't get the bloodstone. I did know the answers off the top off my head but I've forgotten but I do know that one of you lot out there knows the answers so please put Sam out of his misery. I thank you!!

FREE CASSETTES!

If your hint, tip or map is used by The Tipster you can claim a FREE CASSETTE (from those currently available from The Accessory Shop) but you won't get one if you don't send something to The Tipster - get tipping now!

HOW TO CLAIM

If you see your name in this column just drop us a line and say 'My name is ..... and I claim my free Tipster cassette' and simply tell us which cassette you would like (give an alternative just in case). We will whip it off to you poste haste (or straight away). If you prefer you can always give us a ring instead on the usual number

SILENT CITY

Another Kevin has sent in tips but this time its Kevin Calford of Swansea. He's got nice snippets for **SILENT SERVICE** and **ALTERNATE REALITY - THE CITY**.

Can't use the periscope at night in ***Silent Service***? Yes you can, if you do the following. During daylight hours, ensure that the periscope is raised. When night falls (with the periscope still raised) you will find that you can use it whilst submerged, making night attacks even easier(?). However, don't lower the periscope as you will be unable to raise it again.

Normally in ***Alternate Reality - The City*** "indestructible" lifeforms such as *GHOSTS, SPECTRES, WRAITHS, BROWN MOLD* and *BLACK SLIME* can be killed if you use a magical weapon such as a *MAGICAL LONGSWORD*.

Also, if you have the patience, try to find a *MAGICAL FLAME-SWORD* as it's the most effective weapon in the city (there aren't many of these around as I've only come across a handful since playing the game - when it first came out!)

I've come across a bug in their RPG - if you swallow a weak potion, then a *DEADLY POISON* potion, you cannot be cured - even if you get to a healer or quaff a *CURE POISON* potion, your *HIT POINTS* continue to drop by 1 until you die. So if you poison yourself from just one potion, it's best to see a healer, rather than look for a *CURE POISON* potion.

The answer your question, Kev, as to why the publishers stopped producing any more in the series is because they claimed that there wasn't enough support to continue. Haven't we heard that somewhere before?

IS EVERYBODY DEAD????

That's all the tips that were sent in this time, maybe The Tipster has been so successful that every game ever written for the Atari Classic has been featured in this column - NO WAY! There are still zillions of games we have not covered and dozens of extra cheats, hints and tips on those we have, so if you'd like to see your name in lights or just in print then get your stuff in pronto. I need anything that you've got - maps, tips, hints, cheats, solutions, answers to questions etc., etc. you get the message. Fame's never been cheaper, only the cost of a stamp, so what are you waiting for get going.

All the stuff you've got comes to me at

**THE TIPSTER
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DO IT NOW!



Well, dear, if you would send some tips in to The Tipster, I would do it

TOKENISED BASIC

David Sargeant presents a utility to help you understand the way the Atari stores your programs

In issue 57 there was an article called 'Varedit' by Richard Lewis who wrote about variables in Atari BASIC tokenised programs. This reminded me of my own work on the subject and I would like to share with you this program which deals with an entire tokenised listing.

USER GUIDE

When you run the program you are presented with a menu offering several options for loading and viewing your tokenised program. Remember that a tokenised program is one saved with the command 'SAVE "D:filename"'.

The keys accepted are the numbers 1-9, the letter 'P' and the Escape key, although options 2-6 deal with listings from a tokenised program, so they cannot be accessed until a file has been loaded into the buffer.

Option 1. You are prompted to type in the name of the tokenised file that you wish to view. If you mistype the file name, you can use the Back Space key to correct it or you can press the Escape key to cancel this option altogether. Otherwise, press the Return key to initiate a small machine code routine which loads the file into the buffer. I have initialised the buffer size at 15000, but you can alter this to your preference by changing the variable BSIZE.

When the loading has finished you are informed on the screen of the number of bytes that are now in the buffer ready to be viewed. Before you are returned to the menu, the first 14 bytes in the buffer are used to calculate the various offsets into the tokenised program. An explanation of these offsets is given in the above mentioned article.

Option 2. This option just lists the offsets into the tokenised program and addresses of the ROM-based tables.

Option 3. The variables used in the tokenised program are listed page by page.

Option 4. The values of the variables listed by option 3 are displayed.

Option 5. This is the option you choose to list the tokenised BASIC program itself. You are prompted to type a line number from where you wish the listing to begin. At this point press the Return key to begin the listing from the top or type in a line number. Program line numbers range from 0-32767, so any number greater than this is not accepted. Again, if you mistype a number you can use the Back Space key to correct it. If the line number is a valid one the listing begins from there. If it cannot be found you are informed on the screen and returned to the menu.

Option 6. This just lists the last statement to the screen. The line number is 32768.

Options 7,8 and 9. A tokenised program by itself is impossible to follow. When the computer creates the program it uses tokens from the ROM-based Statement, Operator and Function tables. So to understand a tokenised program you need to know what these tokens mean. These options just list these tables.

P. This is a toggle for the printer. When this is 'OFF' all output is directed to the screen. When it is 'ON' two methods of printing are used. With options 3,7,8 and 9 output is still directed to the screen but when each screen is completed you have an additional option of printing it. With options 4 and 5 all output is directed to the printer instead of the screen.

Escape. Exit to a normal Graphics 0 screen.

Throughout all of these options you should be guided by the prompts on the bottom line of the screen. You can pause between page listings, print data or return to the menu by pressing the relevant key.

```
QK 1 REM *****************************
EC 2 REM *     ATARI BASIC TOKENS     *
RZ 3 REM *     by David Sargeant      *
IY 4 REM * ------------------------- *
NP 5 REM * NEW ATARI USER - DEC 1993 *
QP 6 REM *****************************
NM 7 REM
ID 25 GOTO 15000
LX 1000 REM LOAD TOKENISED PROGRAM
HI 1010 ? "┌──────────────────────────
   ──────┐"
FH 1020 ? "|
         |"
CH 1030 ? "| Enter file name : D:>
         |"
FN 1040 ? "|
         |"
FQ 1050 ? "|  ESCAPE  for menu
         |"
FT 1060 ? "|
         |"
FW 1070 ? "|
         |"
FZ 1080 ? "|
         |"
GC 1090 ? "|
         |"
FD 1100 ? "|
         |"
HB 1110 ? "└──────────────────────────
   ──────┘"
AG 1120 POSITION 24,3:GOSUB 10600:IF KEY=
   27 THEN 1270
PI 1130 REM Load file into buffer
BM 1140 FILESPEC$(3)=FILENAME$:TRAP 1280:
   OPEN #1,4,0,FILESPEC$
OR 1150 POSITION 3,7:? "Reading file into
    buffer"
VC 1160 BYTES=USR(ADR(MC1$),16,7,BUFFER,B
   SIZE)
TI 1170 POSITION 3,9:? BYTES;" bytes load
   ed"
UH 1180 CLOSE #1:FILEIN=1:TRAP 40000
UY 1190 REM Calculate BASIC pointers
WQ 1200 LOMEM=PEEK(BUFFER)+256*PEEK(BUFFE
   R+1)-256+BUFFER+14
AP 1210 VNTP=PEEK(BUFFER+2)+256*PEEK(BUFF
   ER+3)-256+BUFFER+14
BO 1220 VNTD=PEEK(BUFFER+4)+256*PEEK(BUFF
   ER+5)-256+BUFFER+14
MZ 1230 VVTP=PEEK(BUFFER+6)+256*PEEK(BUFF
   ER+7)-256+BUFFER+14
LC 1240 STMTAB=PEEK(BUFFER+8)+256*PEEK(BU
   FFER+9)-256+BUFFER+14
LN 1250 STMCUR=PEEK(BUFFER+10)+256*PEEK(B
   UFFER+11)-256+BUFFER+14
OM 1260 MEMTOP=PEEK(BUFFER+12)+256*PEEK(B
   UFFER+13)-256+BUFFER+14
CQ 1270 GOSUB 12000:RETURN
RN 1280 REM Error trap
FG 1290 ERR=PEEK(195):POSITION 3,7:? "Err
   or# ";ERR;
GD 1300 IF ERR=170 THEN ? " - File not fo
   und"
RP 1310 CLOSE #1:GOTO 1270
JH 1500 REM VIEW POINTERS
PG 1510 ? :? :? "   LOMEM
   : ";LOMEM:?
ES 1520 ? "   Variable name table   : ";VN
   TP:?
NB 1530 ? "   Variable value table  : ";VV
   TP:?
OI 1540 ? "   Tokenised program     : ";ST
   MTAB:?
VD 1550 ? "   Current statement     : ";ST
   MCUR:?
XD 1560 ? "   MEMTOP                : ";ME
   MTOP:?
UD 1570 ? "   Statement table       : ";ST
   ATTAB:?
YU 1580 ? "   Operator table        : ";OP
   TAB:?
PL 1590 ? "   Function table        : ";FU
   NTAB:?
CD 1600 GOSUB 12000:RETURN
JK 2000 REM VIEW VARIABLE NAMES
QP 2010 ? "Tokens and variables"
ZC 2020 ADDR=VNTP:TOKEN=128:NUMPAGES=4:NU
   MCOLS=2:NUMROWS=18:NUMSTEPS=18
WE 2030 GOSUB 11000:GOSUB 12000:RETURN
TB 2500 REM VIEW VARIABLE VALUES
XY 2510 ADDR=VVTP:OFFSET=8:CHAN=0:ESCPRES
   SED=0
HW 2520 IF PRTFLAG THEN GOSUB 12400:IF ES
   CPRESSED THEN 2560
ZJ 2530 IF ADDR=STMTAB THEN 2560
VY 2540 GOSUB 11400:GOSUB 11800:IF ESCPRE
   SSED THEN 2560
RU 2550 GOTO 2530
CU 2560 GOSUB 12000:RETURN
JS 3000 REM VIEW TOKENISED PROGRAM
OQ 3010 REM Get line number
XZ 3020 ? "   ┌────────────────────────
   ──┐"
NA 3030 ? "   |
   |"
QU 3040 ? "   | Enter starting line :>
   |"
NG 3050 ? "   |
   |"
SU 3060 ? "   |  RETURN  for default
   |"
NM 3070 ? "   |
   |"
ZI 3080 ? "   └────────────────────────
   ──┘"
FU 3090 ADDR=STMTAB:ESCPRESSED=0
IW 3100 POSITION 27,3:GOSUB 10800:IF I=1
   THEN 3160
OL 3110 LINE=VAL(LINE$):IF LINE>32768 TH
   EN POSITION 27,3:? "      ":GOTO 3100
CU 3120 TKLINE=PEEK(ADDR)+256*PEEK(ADDR+1
   )
VN 3130 IF TKLINE=LINE THEN 3160
CX 3140 IF TKLINE>LINE THEN POSITION 6,11
   :? "*** Line not found ***":GOTO 3230
DV 3150 ADDR=ADDR+PEEK(ADDR+2):GOTO 3120
OC 3160 REM Print
XQ 3170 IF PRTFLAG THEN GOSUB 12400:IF ES
   CPRESSED THEN 3230
RG 3180 ? CHR$(125);:PROMPT=2:GOSUB 10200
IW 3190 IF ADDR=STMCUR THEN 3230
SI 3200 OFFSET=PEEK(ADDR+2):GOSUB 11400
LR 3210 GOSUB 11800:IF ESCPRESSED THEN 32
   30
SV 3220 GOTO 3190
CG 3230 GOSUB 12000:RETURN
MC 3500 REM VIEW CURRENT STATEMENT
KB 3510 ADDR=STMCUR:OFFSET=PEEK(ADDR+2)
YQ 3520 GOSUB 11400:GOSUB 12000:RETURN
OE 4000 REM VIEW STATEMENT TABLE
WD 4010 ? "Tokens and command keywords"
WT 4020 ADDR=STATTAB:TOKEN=0:NUMPAGES=1:N
   UMROWS=21:NUMSTEPS=12
WG 4030 GOSUB 11000:GOSUB 12000:RETURN
UR 4500 REM VIEW OPPERATOR TABLE
UB 4510 ? "Tokens and operator keywords"
MX 4520 ADDR=OPTAB:TOKEN=14:NUMPAGES=2:NU
   MROWS=14:NUMSTEPS=18
WQ 4530 GOSUB 11000:GOSUB 12000:RETURN
VW 5000 REM VIEW FUNCTION TABLE
NZ 5010 ? "Tokens and function keywords"
TL 5020 ADDR=FUNTAB:TOKEN=61:NUMPAGES=1:N
   UMROWS=14:NUMSTEPS=18
WH 5030 GOSUB 11000:GOSUB 12000:RETURN
OL 10000 REM PRINT TOP LINE
AY 10010 POKE 88,TLINELO:POKE 89,TLINEHI
```

continued ☛

TOKENISED BASIC

```
JK 10020 P=INDEX*25+1:POSITION 0,0:? OPTION$(P,P+24)
SP 10030 POKE 88,SCRNLO:POKE 89,SCRNHI:RETURN
XG 10200 REM PRINT BOTTOM LINE
VI 10210 POKE 88,BLINELO:POKE 89,BLINEHI
SN 10220 P=PROMPT*35+1:POSITION 0,0:? USE$(P,P+34)
SV 10230 POKE 88,SCRNLO:POKE 89,SCRNHI:RETURN
DT 10400 REM FLASHING CURSOR
CW 10410 FOR FLASH=1 TO 3:SOUND 0,29,10,8
OS 10420 FOR DELAY=1 TO 10:NEXT DELAY:? CHR$(30);">";:SOUND 0,0,0,0
VL 10430 FOR DELAY=1 TO 10:NEXT DELAY:? CHR$(30);">";
AE 10440 NEXT FLASH:POKE 764,255:RETURN
VT 10600 REM KEYBOARD INPUT-FILENAME
UK 10610 OPEN #1,4,0,"K:":GOSUB 10400:I=1:FILENAME$="            "
TF 10620 GET #1,KEY:IF KEY=27 OR (KEY=155 AND I>1) THEN ? :CLOSE #1:RETURN
IJ 10630 IF KEY=126 AND I>1 THEN ? CHR$(30);" ";CHR$(30);:FILENAME$(I-1,I-1)=" ":I=I-1:GOTO 10620
JV 10640 IF I>12 THEN 10620
NU 10650 IF  NOT (KEY=46 OR (KEY>=48 AND KEY<=57) OR (KEY>=65 AND KEY<=90)) THEN 10620
OD 10660 ? CHR$(KEY);:FILENAME$(I,I)=CHR$(KEY):I=I+1:GOTO 10620
QF 10800 REM KEYBOARD INPUT-LINE NUMBER
AE 10810 OPEN #1,4,0,"K:":GOSUB 10400:I=1:LINE$="     "
VV 10820 GET #1,KEY:IF KEY=155 THEN ? :CLOSE #1:RETURN
CZ 10830 IF KEY=126 AND I>1 THEN ? CHR$(30);" ";CHR$(30);:LINE$(I-1,I-1)=" ":I=I-1:GOTO 10820
QV 10840 IF I>5 THEN 10820
DL 10850 IF  NOT (KEY>=48 AND KEY<=57) THEN 10820
NZ 10860 ? CHR$(KEY);:LINE$(I,I)=CHR$(KEY):I=I+1:GOTO 10820
PP 11000 REM PRINT PAGES
NK 11010 FOR PAGE=1 TO NUMPAGES
MJ 11020 FOR COL=1 TO 36 STEP NUMSTEPS
TB 11030 FOR ROW=3 TO NUMROWS
IZ 11040 IF INDEX=7 AND TOKEN<=55 THEN ADDR=ADDR+2
QE 11050 IF INDEX=8 AND TOKEN<=15 THEN POSITION COL,ROW:? TOKEN;:GOTO 11080
SV 11060 GOSUB 11200:IF ADDR=VNTD THEN ROW=23:COL=39:PAGE=4
NV 11070 IF INDEX=7 AND TOKEN=54 THEN ? CHR$(30);CHR$(30);"LET(imp)"
VM 11080 IF INDEX=8 THEN P=(TOKEN-14)*8+1:? "  ";DESC$(P,P+7)
QR 11090 TOKEN=TOKEN+1:IF INDEX=8 AND TOKEN>60 THEN ROW=23
LT 11100 NEXT ROW:NEXT COL
VV 11110 IF PRTFLAG THEN GOSUB 12400
GA 11120 IF PAGE<NUMPAGES THEN GOSUB 11600:IF ESCPRESSED THEN PAGE=4
VW 11130 NEXT PAGE:RETURN
NW 11200 REM PRINT TOKEN AND STRING
AQ 11210 POSITION COL,ROW:? TOKEN:POSITION COL+4,ROW:INVFLAG=0
IY 11220 CHARCODE=PEEK(ADDR):ADDR=ADDR+1
DB 11230 IF CHARCODE>127 THEN CHARCODE=CHARCODE-128:INVFLAG=1
XW 11240 ? CHR$(CHARCODE);:IF INVFLAG THEN RETURN
ZB 11250 GOTO 11220
XG 11400 REM PRINT 8 NUMBERS
EK 11410 COUNT=0:FOR I=0 TO OFFSET-1
AM 11420 IF COUNT=0 THEN ? #CHAN;SPACE$;
LK 11430 NUM$=STR$(PEEK(ADDR+I))
```

```
WA 11440 ? #CHAN;SPACE$(1,4-LEN(NUM$));NUM$;
SV 11450 COUNT=COUNT+1:IF COUNT=8 THEN ? #CHAN:COUNT=0
MI 11460 NEXT I:ADDR=ADDR+OFFSET
DW 11470 IF COUNT=0 AND INDEX=5 THEN ? #CHAN
AX 11480 IF COUNT>0 AND INDEX=5 THEN ? #CHAN:? #CHAN
EV 11490 RETURN
CQ 11600 REM NEXT PAGE
EI 11610 PROMPT=4:GOSUB 10200:POKE 764,255:ESCPRESSED=0
EN 11620 IF PEEK(764)=28 THEN ESCPRESSED=1:POKE 764,255:RETURN
EH 11630 IF PEEK(764)<>33 THEN 11620
TI 11640 ? CHR$(125):POKE 764,255
DJ 11650 IF INDEX=3 THEN ? "Tokens and variables"
OU 11660 IF INDEX=8 THEN ? "Tokens and operator keywords"
ND 11670 PROMPT=1:GOSUB 10200:RETURN
PM 11800 REM PAUSE OR ESCAPE?
EP 11810 IF PEEK(764)=28 THEN ESCPRESSED=1:POKE 764,255:RETURN
CG 11820 IF PEEK(764)<>33 THEN RETURN
AW 11830 ROW=PEEK(84):COL=PEEK(85):POKE 764,255
PJ 11840 PROMPT=5:GOSUB 10200
FF 11850 IF PEEK(764)=28 THEN ESCPRESSED=1:POKE 764,255:RETURN
LB 11860 IF PEEK(764)<>33 THEN 11850
RJ 11870 POKE 764,255:PROMPT=2:GOSUB 10200
OC 11880 POKE 84,ROW:POKE 85,COL:RETURN
TU 12000 REM PROMPT TO RETURN TO MENU
TD 12010 PROMPT=3:GOSUB 10200:POKE 764,255
XN 12020 IF PEEK(764)<>33 THEN 12020
HR 12030 POKE 764,255:RETURN
IU 12200 REM PRINT TOGGLE
GX 12210 PRTFLAG=(PRTFLAG=0)
OS 12220 P=PRTFLAG*5+1:POSITION 30,21:? PRT$(P,P+4):RETURN
IN 12400 REM PRINT SCREEN
PB 12410 PROMPT=6:GOSUB 10200
JW 12420 IF PEEK(764)=28 THEN POKE 764,255:ESCPRESSED=1:RETURN
CX 12430 IF PEEK(764)<>33 THEN 12420
XK 12440 OPEN #1,8,0,"P:":POKE 764,255
MX 12450 IF INDEX>=4 AND INDEX<=5 THEN CHAN=1:RETURN
UN 12460 PRTADDR=SCREEN:FOR I=0 TO NUMROWS
ZO 12470 X=USR(ADR(MC2$),PRTADDR,PRTBUFFER)
ZP 12480 X=USR(ADR(MC1$),16,9,PRTBUFFER,41)
HH 12490 PRTADDR=PRTADDR+40:NEXT I
BU 12500 CLOSE #1:RETURN
JN 15000 REM MAIN LOOP
DK 15010 GOSUB 25000:REM Initialise
LS 15020 GOSUB 10000:PROMPT=0:GOSUB 10200:PROMPT=1
NN 15030 GOSUB 20000:REM Menu
ED 15040 GOSUB 20200:REM Get menu option
CE 15050 IF ESCPRESSED THEN 15130
WY 15060 IF (INDEX=1 OR INDEX>=7) THEN 15090
DJ 15070 IF ((INDEX>=2 AND INDEX<=6) AND FILEIN) THEN 15090
BR 15080 GOTO 15040
XI 15090 ? CHR$(125):IF (INDEX=4 AND  NOT PRTFLAG) THEN PROMPT=2
GD 15100 GOSUB 10000:GOSUB 10200:GOSUB INDEX*500+500
FI 15110 IF CHAN=1 THEN CLOSE #CHAN:CHAN=0
```

```
LK 15120 ? CHR$(125);:INDEX=0:GOTO 15020
SQ 15130 REM End program
ZF 15140 GRAPHICS 0:END
SU 20000 REM MENU
JJ 20010 ? "┌──────────────┐"
YG 20020 ? "| Menu  options:- |"
AV 20030 ? "└──────────────┘":? :P=26
ZZ 20040 FOR I=1 TO 9:? "     ";CHR$(I+48);", ";:IF I=1 THEN ? "Load";
WK 20050 ? OPTION$(P,P+24):IF I=1 THEN ? :? "  View/Print":?
TQ 20060 P=P+25:NEXT I
GN 20070 ? "     P,  Toggle Printing"
DS 20080 ? "     ESC to Exit":?
RU 20090 ? "┌──────────────────────────┐"
GW 20100 ? "| Enter choice >      Print :   |"
QR 20110 ? "└──────────────────────────┘"
OM 20120 P=PRTFLAG*5+1:POSITION 30,21:? PRT$(P,P+4):RETURN
NC 20200 REM GET MENU OPTION
NL 20210 OPEN #1,4,0,"K:":ESCPRESSED=0:POSITION 17,21
PO 20220 GOSUB 10400:GET #1,KEY
IY 20230 IF KEY=27 THEN CLOSE #1:ESCPRESSED=1:RETURN
NT 20240 IF KEY=80 THEN GOSUB 12200:POSITION 17,21
VC 20250 IF  NOT (KEY>=49 AND KEY<=57) THEN 20220
UK 20260 CLOSE #1:INDEX=KEY-48:? INDEX:RETURN
ZP 25000 REM INITIALISE
CH 25010 GRAPHICS 0:POKE 559,0:SETCOLOR 1,0,2:SETCOLOR 2,0,6:SETCOLOR 4,9,2
LF 25020 POKE 16,64:POKE 53774,64
WU 25030 POKE 82,1:POKE 83,38:POKE 752,1:BSIZE=15000
RD 25040 REM Strings
UO 25050 DIM OPTION$(250),USE$(245),DESC$(376),BUFFER$(BSIZE),PRTBUFFER$(41)
WT 25060 DIM FILENAME$(12),FILESPEC$(14),MC1$(39),MC2$(32),PRT$(10),LINE$(5),SPACE$(3),NUM$(3)
BZ 25070 OPTION$(1,25)="         ATARI BASIC"
JV 25080 OPTION$(26,50)=" Tokenised Program   "
LU 25090 OPTION$(51,75)=" Pointers      "
EO 25100 OPTION$(76,100)=" Variable Names   "
TK 25110 OPTION$(101,125)=" Variable Values     "
PQ 25120 OPTION$(126,150)=" Tokenised Program   "
LW 25130 OPTION$(151,175)=" Current Statement   "
SN 25140 OPTION$(176,200)=" Statement Table   "
NV 25150 OPTION$(201,225)=" Operator Table   "
JQ 25160 OPTION$(226,250)=" Function Table   "
HY 25170 USE$(1,35)="     written by David Sargeant "
HD 25180 USE$(36,70)="      "
TA 25190 USE$(71,105)="    SPACE  to pause ESC  to exit "
QP 25200 USE$(106,140)="      SPACE █ for menu   "
DX 25210 USE$(141,175)=" SPACE  for next page ESC  to exit"
GY 25220 USE$(176,210)="   <<< Paused >> > SPACE   ESC "
JB 25230 USE$(211,245)="   <<< Print >>> SPACE   ESC "
QX 25240 DESC$(1,32)="   # var   $ varnot usednot used"
IZ 25250 DESC$(33,64)="      st at end   "
IU 25260 DESC$(65,96)="line end     "
KI 25270 DESC$(97,128)="   numeric "
PP 25280 DESC$(129,160)="numeric numeric numeric numeric"
DC 25290 DESC$(161,192)=" numeric    "
YL 25300 DESC$(193,224)="   "
TC 25310 DESC$(225,256)="   # assign"
MF 25320 DESC$(257,288)="$ assign string string  string "
UB 25330 DESC$(289,320)="string  string string  unary   "
ZW 25340 DESC$(321,352)="unary   string array   array   "
AE 25350 DESC$(353,376)="functiondimens. array   "
XY 25360 BUFFER$(1)=" ":BUFFER$(BSIZE)=" ":BUFFER$(2)=BUFFER$
MJ 25370 PRTBUFFER$(1,40)=BUFFER$:PRTBUFFER$(41)=CHR$(155)
PO 25380 FILESPEC$(1,2)="D:":PRT$=" OFF  ON ":SPACE$="   "
XP 25390 REM Machine code
KL 25400 FOR I=1 TO 39:READ A:MC1$(I,I)=CHR$(A):NEXT I
GQ 25410 FOR I=1 TO 32:READ A:MC2$(I,I)=CHR$(A):NEXT I
QH 25420 REM Numerics
JW 25430 SCRNLO=PEEK(88):SCRNHI=PEEK(89):SCREEN=SCRNLO+256*SCRNHI
CO 25440 DLLO=0:DLHI=6:DL=DLLO+256*DLHI:TLINELO=64:TLINEHI=6
HN 25450 BLINELO=128:BLINEHI=6:INDEX=0:CHAN=0:PRTFLAG=0
TO 25460 BUFFER=ADR(BUFFER$):PRTBUFFER=ADR(PRTBUFFER$)
IG 25470 FILEIN=0:STATTAB=42143:OPTAB=42974:FUNTAB=OPTAB+78
RI 25480 REM Display list
BJ 25490 FOR I=0 TO 38:READ A:POKE DL+I,A:NEXT I
GI 25500 POKE DL+3,TLINELO:POKE DL+4,TLINEHI
GD 25510 POKE DL+7,SCRNLO:POKE DL+8,SCRNHI
EY 25520 POKE DL+34,BLINELO:POKE DL+35,BLINEHI
XB 25530 POKE DL+37,DLLO:POKE DL+38,DLHI
QZ 25540 POKE 560,DLLO:POKE 561,DLHI:POKE 559,34:RETURN
NB 25550 REM M/C INPUT/OUTPUT DATA
NI 25560 DATA 104,104,104,170,104,104,157,66,3,104,157,69,3,104,157,68
IV 25570 DATA 3,104,157,73,3,104,157,72,3,32,86,228,189,72,3,133
MS 25580 DATA 212,189,73,3,133,213,96
OE 25590 REM M/C CONVERT DATA
NX 25600 DATA 104,104,133,204,104,133,203,104,133,206,104,133,205,162,0,177
NT 25610 DATA 203,24,201,97,176,2,105,32,145,205,200,192,40,208,240,96
BC 25620 REM DISPLAY LIST DATA
YC 25630 DATA 64,64,66,255,255,64,66,255,255,2,2,2,2,2,2,2
UY 25640 DATA 2,2,2,2,2,2,2,2,2,2,2,2,2,2,2,2
NP 25650 DATA 64,66,255,255,65,255,255
```

SHOW ME WHAT YOU CAN DO

This Air Atari8 flight returns you to the Classic PD Zone! On this mission we'll meet a strange alien lifeform known as "the demo". Let us hit Warp Factor 9...

THE TOP MEGADEMO

Regarded by many as the best demo on the Atari 8-bit (or any 8-bit for that matter), ***THE TOP*** is a "megademo" divided into three separate demos comprising 20 parts. The Top was programmed by The World Federation of Mad Hackers (WFMH) from Poland.

THE TOP 1

THE TOP 1 is a four part demo. The entire demo loads from a single file (357 sectors!). It begins with a brief introductory message and a loud digitized "welcome" which leads you into the first part of the demo. A beautifully drawn WFMH floats at the top of the screen. There are coloured bars above it. In the middle of the screen, a circle drawn from tiny white pixels explodes and implodes. At the bottom there is a scrolling message in a large, detailed font. The music is smooth and welcoming.

Press Shift to move onto part two and you will see a massive scrolling message with words as tall as your TV screen. Each letter is carefully drawn from a font showing a futuristic landscape. During the scroller, WFMH ask "Do you like our second scroll?". As the word "scroll" appears on the screen, the smooth scrolling changes to a jerky movement - an enjoyable touch which gives you an idea of what is to come.

Part three begins with a face dropping from the top of the screen to the middle. It then changes to a skull and a clear, digitized "music please" erupts from the speakers of your TV. This is the cue for some moody Alan Howarth 'Halloween-type' music and two more scrolling messages - one from the skulls eye!

The final part of The Top 1 is called 'What?'. Vector shapes rotate at the centre of the screen. There is a plane, clock, disk, etc. Just press Option to change the shape. I liked this part a lot!

The Top 1 is a wonderful demo and a first class example of what can be done with an Atari 8-bit and a little imagination.

CLASSIC PD ZONE RATING - 84%

THE TOP 2

THE TOP 2 is in a similar mould to number 1. It also loads from a single file (434 sectors this time). The same style of introductory message tells you that the following demos are "lame". They were the demos which didn't make it into The Top 1 and weren't good enough for The Top 3. Lame? Hmmm?

The first part of The Top 2 is an impressive digitized music demo which booms out a heavy beatbox-style drum beat and clanging bassline. These are accompanied by a sampled "yeah" and the occasional "burp". There aren't any graphics in this part - only a strange pattern on the screen.

Next up is 'Thousand Scrolls'. Dozens of scrolling messages weave their way across the screen. Try reading them all at once and you'll go nuts! Some of the scrollers are in Polish - which doesn't help matters!

Part three is called 'Amazing Stories' and begins with some great music. At the top of the screen is a well drawn "WFMH" with a happy face bouncing up and down. Two coloured bars take up most of the screen and a scrolling message weaves its way through them. The amazing stories can be found in the scroller at the bottom of the screen. They're not amazing but, like all WFMH scrolling messages, they do make interesting reading. You will hear that The Top began as a 6 a.m. telephone call and why a mum screams when she watches TV.

The 3 MHZ Demo is a music demo with a horrible "XL-Soft" floating across the screen. There are also some more scrollers to read. Press the 1-5 keys for different music tracks. A couple of them are not bad - if you like synthesizer music.

Press Return for the final part of The Top 2. It shows a detailed picture of a space ship with a scrolling message underneath. Smaller space ships fly across the screen to familiar music from ABBUC magazine.

Overall, The Top 2 is not of the same standard as its predecessor but they make no bones about telling you so. However, these five demos are still pretty good and hold their own against many other European demos of supposedly superior quality.

CLASSIC PD ZONE RATING - 70%

THE TOP 3

THE TOP 3 was, unfortunately, the last part of The Top Megademo. WFMH kept their best until last before leaving the Atari Classic. It is an eleven part demo with each part loading individually and depacking before it runs.

Part one begins with some hacked music and a strange horizontal graphic equalizer which pulsates to the music. A large tile displaying "w f m h" appears above this graphic and begins to rotate. A scrolling message at the bottom of the screen welcomes you to The Top 3. A good start!

Press the Shift key and you enter part two - a wonderful winter scene with a scrolling message of goodwill. No music here due to lack of space.

Part three begins with a large scroller and moves onto a three bar graphic equalizer with four large scrollers; each splitting a bar.

Next up is the only weak part of The Top 3. It is an awful demo with a pathetic Brain Soft logo, a horizontal Polish scroller and a vertical scroller in English which you can control



with your joystick. How did this piece of trash make it into this demo of all demos!?

After a great deal of loading and depacking, a screen appears detailing information about part five. You are told that "unexpanded freaks" won't be able to see everything (i.e. if you don't have 128K or more, you won't see the complete effect). The message also tells you that over 444 KB of packed data was used to bring you this part. The depacker works all the time the demo is in progress. With great anticipation, I pressed the Shift key...

The eerie music from Draconus blasts from my TV speaker and a dancing girl appears at the centre of a black screen. The effect is amazing! She is drawn with thousands of tiny grey pixels. Beginning in a slow, rhythmic dance, she glides to the music. After a short while she begins to really let herself go and starts throwing her hands out and turning her head - you can even see her clothes move and her hair swish through the air! After a couple of minutes, the music speeds up and she begins to turn around and around. It is very lifelike! At the end of the music, she throws her hands up in the air and freezes, before starting over from the beginning.

You really have to see this effect - it is worth the purchase of a 130XE just to see the extra parts! On an 800XL you only see the part when she throws her hands out and turns her head (still worth seeing). There are also two scrolling messages which scroll vertically and horizontally past the dancing girl. As usual, the words are beautifully drawn in a detailed font.

Should you ever decide to move on from the dancing girl, you will see Video Worm; a cute little demo with a small worm crawling across the screen, underneath a stylish "VIDEO WORM". At the bottom of the screen is a superb scroller with five 'acids' (happy faces) rolling along the top of the words. Whenever the scroller goes up or down, the acids bobble about. In the scroller it is explained that the acids are in fact the heads of people who didn't believe that this effect was possible. Press Shift and the worm finally makes it to the edge of the screen and leads you into part seven, which gives you the WFMH swap address.

Part eight is an average demo with a pole position type scrolling landscape. A car is drawn at the centre and a large "ATARI" can be seen at the top. There are two scrollers, one in English and one in Polish. The ATARI at the top frequently changes to the word "TRASH" - I don't know what they mean by this but I hope it means that all other formats are trash, and not Atari!

The ninth part is also pretty average (by WFMH standards). A boring X-L-S (XL Soft) at the top; a "WFMH" and a couple of scrollers. However, I did like the greetinx line which fell from the WFMH and bounced about.

The penultimate part is called Unlimited Bobs. Some great music is followed by a wonderful effect which shows hundreds of balls flying about the screen making circular patterns. It is very fast! All the balls are the same colour and if you look closely at your TV screen, you'll see the detail involved! Press Start or Select to change the path of the balls. Superb!

The final part is called The Last Scroll and it reads like a farewell to the Atari 8-bit from the World Federation of Mad Hackers. Some smooth music plays in the background whilst a slow-moving vertical scroller, in a colourful font, gives the last messages and greetinx.

The Top 3 is a "must-see" disk which will have you returning to it time and time again just to see your Atari Classic in top gear.

CLASSIC PD ZONE RATING = 91%

IS THE TOP THE TOP?

After seeing ***The Top Megademo***, I feel proud that my Atari 8-bit can do so much! Not all of The Top is great, but with over a dozen excellent parts it is definitely one of the top three demos on the Atari 8-bit. I think it is the best (so far).

The music was hacked from commercial games and so is of a very high quality, albeit repetitive if you own the games! The graphics are generally excellent with great care having been used to show everything in the most detailed way. The scrolling messages are fun to read and there are plenty of them! The fonts are all beautifully drawn.

This demo is an undoubted masterpiece which will take its place in Atari 8-bit history. If only the WFMH had stayed with us a little while longer to produce part four! However, the three parts we do have must be cherished and enjoyed. Whenever you feel like showing off your Classic to the local 16-bit big-head, just reach for The Top and watch in hilarity as he turns green! The Top is indeed the top!

See-Ya!

Unfortunately, due to low fuel status, we must now return home. Join us next time as we travel deeper into the Classic PD Zone and go where no Atarian has been before! The needs of the Atari 8-bit outweigh the needs of all other systems! It has, and always shall be... THE BEST!

Mission #4 reviews have been:
DISK #150 - EURO DEMOS 3 (featuring The Top 1)
DISK #151 - EURO DEMOS 4 (featuring The Top 2)
DISK #161 - POLISH DEMOS 2 (The Top 3)

XL/XE UTILITY

DIRECTORY HEADER

Put away the sector editor because John Foskett has a much easier way of adding a personalised header to your disk directories

Looking at the directory of many commercial disks, it can be seen that in many cases the directory contains some form of header. In the case of the New Atari User issue disks, the header contained within the directories makes use of characters that cannot normally be used for a file name, therefore to simply save a null file to disk is not sufficient and some other means to create a header is required. A disk sector editor can be used to amend the first directory sector, but this could prove inconvenient and time consuming, especially if the wrong keys were to be accidentally pressed. The answer to the problem was to write a small program to create the header using a more user friendly means and hence Directory Header was born.

Directory Header is capable of creating a header consisting of up to eight lines (that is completely filling sector 361 if required), each line consisting of up to eleven characters.

THE SCREEN

Apart from the title at the top, the screen is split into two sections. The top section is used to display the header as it is being created line by line, exactly as it will appear within the disk's directory. The lower section is used for creating each line and to display the various menus and comments.

USING THE DIRECTORY HEADER

Each line is entered at the prompt thus: ">" together with the instruction "Please enter line X" (where X is the current line number). Editing a line is achieved by using the DELETE BACK SPACE key, the left/right arrow keys in the usual way with CONTROL and ESCAPE to exit.

Upon pressing RETURN to enter the line, a menu is displayed which again allows ESCAPE to exit. "C" is pressed to continue with the next line or "E" is pressed to end the header creation and to pass on to the next stage.

PREPARE DISK

Prepare disk allows a disk to be formatted in either single or enhanced density, ESCAPE again is used to exit. "S" is pressed to select single density or "E" is pressed for enhanced density.

After selecting, a cautionary comment is displayed which requires "Y" to be pressed to continue. Any other key will return back to the previous stage to select the format density.

Upon pressing "Y", the disk which is currently in drive #1 is formatted and the header written into the disk's directory (sector 361).

After the header has been written, the option to write the DOS.SYS file is given and upon pressing "Y" the DOS.SYS file is written and locked.

Whether or not the DOS.SYS file is written to disk, the option to prepare another disk is presented. Pressing "Y" will allow the format density for this disk to be selected. Any other key will exit.

TECHNICAL DETAILS

A small VBI routine controls the type of characters used at any time by using one of the unused locations in page zero, that is location 203. When this location contains a zero, only uppercase characters can be used. This cancels any accidental press of the CAPS key or the inverse video key when selecting from the various menus. When memory location 203 contains a non-zero value, any character can be used, this is the case when entering line details.

Two further locations in page zero are used, (204 and 205) which are used to store the status of the key board from locations 694 and 702 respectively and restoring them after selecting from the menu.

All possible errors are trapped and are displayed on screen together with an appropriate message. RETURN must be pressed to continue.

DIRECTORY HEADER

```
QB 10 REM ┌──────────────────────────┐
WC 20 REM |   DISK DIRECTORY HEADER   |
YE 30 REM |        Written by         |
GD 40 REM |John Foskett  December 1992 |
IN 50 REM |     For New Atari User    |
JX 60 REM ├──────────────────────────┤
LB 70 REM |   Dedicated to my mother  |
QG 80 REM └──────────────────────────┘
QE 90 GOSUB 790:GOSUB 250:GOTO 390
KT 100 REM ----------------------------
AR 110 REM  Enter Details 
BC 120 OPEN #1,4,0,"K:":I$=" ":I$(MAX)="
   ":I$(2)=I$:I$="":P=0:POSITION H,V+1:?
   "‾"
QJ 130 POKE 764,255:GET #1,K:IF K=155 THE
   N CLOSE #1:RETURN
HC 140 IF K=27 THEN POP :POP :CLOSE #1:RU
   N
MB 150 IF K>26 AND K<32 OR K>124 AND K<12
   8 OR K>155 AND K<160 OR K=254 OR K=255
    THEN 180
HZ 160 IF P<MX THEN P=P+1:POSITION H+P-1,
   V:? CHR$(K);"↓← ‾ ":I$(P,P)=CHR$(K)
MA 170 IF P=MX THEN POSITION H+P-1,V:? CH
   R$(K);"↓←‾ ":I$(MX,MX)=CHR$(K)
XE 180 IF K=31 AND P<MX-1 THEN POSITION H
   +P,V+1:? " ‾":P=P+1
NV 190 IF K=30 AND P=MX THEN P=MX-1
NW 200 IF K=30 AND P>0 THEN POSITION H+P-
   1,V+1:? "‾ ":P=P-1:IF P<0 THEN P=0
LR 210 IF K=126 AND P>0 THEN POSITION H+P
   -1,V:? " ↓←‾ ":I$(P,P)=" ":I$(P)="":P=
   P-1
MS 220 GOTO 130
LA 230 REM ----------------------------
IG 240 REM  Entry Loop 
DL 250 LINE=LINE+1:POSITION 6,18:? "PLEAS
   E ENTER LINE ";LINE;":":? "▸▸←←↓>"
RU 260 ? "↓";L$:? " ESCAPE  EXIT
    RETURN  ENTER";:POKE 559,34
UN 270 POKE 203,1:POKE 694,PEEK(204):POKE
    702,PEEK(205):GOSUB 120:POKE 204,PEEK
   (694):POKE 205,PEEK(702):POKE 203,0
JA 280 J=LINE*16-15:SEC$(J)="b♥♥♥♥":SEC$(
   J+5)=I$
KN 290 ? "↑";S$:POSITION 6,7+LINE:? "LINE
    ";LINE;":  * ";I$:POSITION 29,7+LINE:
   ? "000"
JF 300 IF LINE=8 THEN RETURN
CT 310 POSITION 2,18:? S$:? :? S$:? S$:PO
   SITION 17,23:? " C  CONTINUE  E  END"
   ;
BQ 320 GOSUB 650:IF K=27 THEN POP :RUN
PY 330 IF K=67 THEN 250
SH 340 IF K=69 THEN 360
NI 350 GOTO 320
BR 360 J=(LINE*16+1):SEC$(J)="♥":SEC$(128
   )="♥":SEC$(J+1)=SEC$(J):RETURN
LJ 370 REM ----------------------------
VT 380 REM  Select Format Density 
TU 390 GOSUB 680:DS=0:? "PREPARE DISK"
HD 400 ? "↓SELECT DENSITY TO FORMAT:":POS
   ITION 2,22:? L$:? " ESC  EXIT  E  ENH
   ANCED  S  SINGLE";
BP 410 GOSUB 650:IF K=27 THEN POP :RUN
YG 420 IF K=83 THEN PREP=0:PREP$="SINGLE"
   :GOTO 460
OK 430 IF K=69 THEN PREP=1:PREP$="ENHANCE
   D":GOTO 460
NG 440 GOTO 410
UR 450 REM  Prepare Disk 
FW 460 GOSUB 680:? " CAUTION  PREPARE DI
   SK↓":? PREP$;" DENSITY SELECTED↓"
LG 470 ? L$:? "PRESS  Y  TO PREPARE DISK
   IN DRIVE 1";
ZI 480 GOSUB 650:IF K<>89 THEN 390
FP 490 GOSUB 680:? "PREPARING DISK IN ";P
   REP$;" DENSITY":? "↓↓FORMATTING DISK"
FU 500 IF PREP=0 THEN XIO 253,#1,0,0,"D:"
HJ 510 IF PREP=1 THEN XIO 254,#1,0,0,"D:"
JH 520 ? "↑WRITING HEADER ":BUF=ADR(SEC$)
   :HI=INT(BUF/256):LO=BUF-HI*256
QE 530 POKE 769,1:POKE 770,87:POKE 772,LO
   :POKE 773,HI:POKE 778,105:POKE 779,1:I
   =USR(1536)
TK 540 REM  Write DOS.SYS ? 
EX 550 ? "↑";S$:? L$:? "PRESS  Y  TO WRIT
   E 'DOS.SYS'";:GOSUB 650:IF K<>89 THEN
   590
FJ 560 DS=1:? "↑↑↑":? :? S$:? S$;:? "↑↑↑"
   :? "WRITING 'DOS.SYS'":POSITION 15,8+L
   INE:? "* DOS      SYS 037"
NE 570 OPEN #1,8,0,"D:DOS.SYS":CLOSE #1:X
   IO 35,#1,0,0,"D:DOS.SYS"
ZB 580 REM  Disk Prepared 
FK 590 GOSUB 680:? "DISK PREPARED IN DRIV
   E 1↓":? PREP$;" DENSITY WITH";:IF DS=0
    THEN ? "OUT";
RM 600 ? " 'DOS.SYS'↓":? L$:? "PRESS  Y 
   TO PREPARE ANOTHER DISK";
XN 610 GOSUB 650:IF K<>89 THEN RUN
BI 620 POSITION 2,8+LINE:? S$:GOTO 390
LE 630 REM ----------------------------
LN 640 REM  Get Key 
HS 650 POKE 764,255:OPEN #1,4,0,"K:":GET
   #1,K:CLOSE #1:RETURN
LK 660 REM ----------------------------
LA 670 REM  Clear Lower Screen 
CQ 680 FOR I=18 TO 23:POSITION 2,I:? S$;:
   NEXT I:POSITION 2,18:RETURN
LQ 690 REM ----------------------------
AV 700 REM  Error Trap 
GK 710 TRAP 710:CLOSE #1:P=PEEK(195):M$="
   UNSPECIFIED ERROR":IF P=138 OR P=139 T
   HEN M$="NO RESPONSE FROM DISK DRIVE"
NT 720 IF P=143 THEN M$="CORRUPTED DATA"
IN 730 IF P=173 THEN M$="CANNOT FORMAT DI
   SK"
KM 740 GOSUB 680:? "ERROR ";P;" ENCOUNTER
   ED↓":? M$:? :? L$:? "PRESS  RETURN  TO
    CONTINUE";
FA 750 GOSUB 650:IF K<>155 THEN 750
QN 760 GOTO 390
LN 770 REM ----------------------------
TP 780 REM  Initialise 
RO 790 GRAPHICS 0:POKE 16,64:POKE 53774,6
   4
JU 800 POKE 559,0:POKE 712,146:TRAP 710:R
   ESTORE 880:FOR I=0 TO 28:READ J:POKE 1
   536+I,J:NEXT I
FC 810 POKE 204,0:POKE 205,64:POKE 54286,
   0:POKE 548,5:POKE 549,6:POKE 54286,255
SW 820 LINE=0:H=14:V=20:MX=11:MAX=MX+1:DI
   M PREP$(8),I$(MAX),L$(36),M$(27),S$(37
   ),SEC$(128)
AH 830 L$="_":L$(36)="_":L$(2)=L$:S$=" ":
   S$(36)=" ":S$(2)=S$:SEC$=" ":SEC$(128)
   =" ":SEC$(2)=SEC$
TK 840 REM  Draw Screen 
VC 850 POKE 752,1:? "K":POSITION 0,0:? "█
     D I R E C T O R Y   H E A D E R   
   █"
BP 860 ? "▸←Written by John Foskett 1992↓
   ":? L$:? "▸←DIRECTORY DISPLAY:":? "↓↓↓
   ↓↓↓↓↓↓↓↓";L$:RETURN
SJ 870 REM  Data 
ND 880 DATA 104,32,83,228,96,72,169,0,133
   ,77,141,255,2,165,203,208,8,141,182,2,
   169,64,141,190,2,104,76,138,194
```

"Well, I tried my first one when I was 18 and then I just couldn't help myself"

I haven't always been an adventure junkie. My life was quite normal once. In fact, when I look back at my pre-adventure life I was an average eighteen year old and I did average eighteen year old things - excessive eating, excessive drinking and sufferance of excessive headaches the next morning. In between my 'normal' activities I enjoyed the odd shoot-em-up on the trusty old 8-bit, and occasionally I would complete the odd polytechnic assignment with the assistance of Atari Writer Plus.

THE TEMPTATION

My life was to change and normality was to be lost forever, however, all because of a chance encounter with a computer shop. It was an ordinary day, and I was making my usual lunchtime trip between two conveniently located public houses, when I noticed the small shop that would change my life, and my understanding of the term logic, irreversibly. I was drawn towards the new found shop and, after some deliberation, I stepped inside. My eyes having adjusted to the dimly lit, cellar-like shop, I approached some shelving erected below a large 'Atari' sign. I was faced with the all-too-familiar sight known to Atarians worldwide - vast open spaces devoid of 8-bit software. I was just about to resume my lunchtime itinerary, when I noticed a box hiding in the corner that sported the 'Atari 32K' label. It was some weird looking game called Adventure Quest. I was intrigued, and decided to add this novel looking game to my software collection.

Some time later I arrived home and set up the old Atari, and started loading the game. After an eternity of hisses and crackles it completed loading, and a screen of text appeared. I felt totally cheated. Where are the graphics? What happened to the sound? I want to shoot something! With some considerable distaste I read the instruction sheet, and decided to at least try the game. Many hours later I emerged, bleary eyed, extremely frustrated .... and totally hooked!

EFFECTS OF ADDICTION

My life has never been the same since. I have experienced situations that would make the average Bug Blatter Beast run away screaming in horror. My home has been with the vampires, goblins, orcs, wizards and trolls, along with a whole host of other colourful characters. And, I must admit, I have not always been heroic. In fact, now I come to think of it, I have done some pretty awful things. In Mindwheel I attempted to "eat all", while holding a frog, among other items. As the frog screamed at me to stop I first took a good bite, and then quickly gobbled the rest of him down. Even after the terrible deed was done I was constantly reminded of my guilt by the piece of tendon caught in my teeth - I still feel ill when I talk about it now. In Lancelot I tried something less than gentlemanly with Guinevere (who wouldn't?) and I received a slap across the face for my troubles. After spending the night in a barn and being woken up by a flock of pigeons with stomach upsets that is the last time I try to become romantically involved with a princess! I also remember swearing with frustration in one Level 9 adventure, only to have my legs slapped by Mary Whitehouse! Of all the bad deeds I have done in my time, my worst was most definitely to try and shoot Floyd in Stationfall. For anyone who has not met up with Floyd, he was a fun loving and boisterous robot, the creation of Steve Meretzky and Infocom.

PERSONALITY CHANGES

My persona has changed over the years, through my many adventures, and many visits to different worlds. In the waking world, my worst habits now seem to be excessive coffee drinking in the small hours, and a tendency to mumble barely audibly, as I chew over possible solutions to puzzles still not beaten. I also seem to spend a lot of time looking over my shoulder and wondering what's hiding behind the bathroom door - mind you, I never forget my towel ...

I never managed to completely convince my wife, Linda, of the rewards to be reaped in adventure, and our few attempts to tackle Zork I together have not been totally successful. Still, our first child is on its way as I write this and I am sure a fellow adventurer is in the making. I must take this opportunity to thank Linda for her most understanding attitude. A forgiving partner is essential in this most harrowing of pastimes, as every orc-head hunter will know. She amazes me with her ability to look interested as I bounce new ideas off her - "If I could just get the key off the slime monster and use it to open the door under the mushroom I might be able to tie the string I made out of dog hairs to the handle and use it to pull the silver tooth out of the dragon's mouth .... now what can I do with the tooth?".

OUT OF CONTROL

Not all of the problems and frustrations are as a result of intentional puzzles. I have been sent close to screaming pitch as a result of inadequate programming which will not accept the most basic of input. Any adventurer who has tried to use the matter transporter in Mordon's Quest will know what I mean (although Mordon's Quest, in all other respects, is excellent). Talking of Mordon's Quest. That reminds me of another less than heroic deed. In this adventure I had to kill a pygmy



in order to feed his body to a man eating plant, never mind sacrificing a frog to a waterfall! What have I got against frogs?

Another of my particular hates is the seemingly obligatory maze. Why do they find it necessary to slow an adventure down by putting a maze in your way? I don't mind a maze if it is a legitimate puzzle, such as the Rainbow Room in Guild of Thieves, or the mazes Infocom include in their adventures. Mazes lead me on to mapping. I have always made a map of every adventure I have attempted or solved. It is a compulsion with me now. Even the easiest of adventures, with only ten or twelve rooms has my map drawing skills put to work. It isn't always necessary to draw a map, but I like to do it for a sense of completeness. I think this has developed as another facet to my persona, through too many hours of adventuring. Every possible option has to be tried, even the most ludicrous. This unfortunate tendency also appears to surface in my every day life (I can't even read a book without first reading the acknowledgements and preface!). Be warned, the path to adventure proficiency is not an easy one.

ADDICTION TAKES MANY FORMS

I have, over the years, built up a formidable collection of adventures ranging from a level children would enjoy, to the fiendish. I have tried many different adventure software houses, including Infocom, Level 9, Adventure International, Melbourne House, Broderbund, Magnetic Scrolls and Rainbird. Some of the adventures I own are true masterpieces - the highlight in using others is listening to the thing load! Of all my adventures, most of my all time favourites are from Infocom, who just couldn't produce a bad game.

My first exposure to Infocom was in the form of Infidel, which is classed as 'Advanced' in its level of difficulty (although I found it easier than the two 'Standard' Infocom adventures I have solved since). Infidel puts you in the unenviable position of an archaeologist, left by his frustrated entourage, looking for a lost pyramid. Ingenious technical traps abound in this adventure, as wits are pitted against pivoted doors, secret passages, sand flows, disappearing floors, and other ingenious devices. If you enjoy films such as Raiders of the Lost Ark then this adventure is a must. I may often seem biased in favour of Infocom adventures, but unless you have actually tried one you will be unable to imagine the quality of their products.

SUBMITTING YOUR SOUL

Talking of quality, I must stray for a moment to the realms of role playing fantasy games, in order to mention Alternate Reality - the City and the Dungeon. For the uninitiated, role playing is a similar but uniquely different genre of adventure. In a role playing game (RPG for short) you take on the part of a central character, who can usually be moved around with the aid of a joystick. RPG's also work in 'real time' or a speeded up version of it. This means that time passes while you are considering which action to take next. I was amazed by the City when I first obtained it, and I am still impressed every time I load it up. The Dungeon, second in the series, is in my opinion even better. Excellent graphics, good gameplay, and a very large variety of characters, spells, weapons, and so on. These pieces of software will keep you enthralled for months, or years. Both of these are still available from Derek Fern. I would advise any adventurer to give them a try, while they are still available.

BUT WHY?

After years of playing adventures, I became interested in finding out how they work. I shall be forever grateful to John White who wrote a three part tutorial on writing adventures, which was published by New Atari User. I finally understand, to a limited degree, how those incredible games such as Adventure Quest, were crammed into 32K. In fact, thanks to John's articles, I have since written a reasonable adventure called 'Guardian', which was substantially improved by my friend Paul Hampshire (hello Paul). The Editor may remember my (failed) submission of last year, still you can't win them all!

As I have progressed through my many adventures, I have formed my own taste in their style and authorship. My passion is for tales of high adventure (as you all know by now). As far as authorship is concerned, I very rarely look at anything other than Infocom, although the Scott Adams series are classics. My five all-time favourites are listed below, and I would recommend them to anybody:

Cutthroats (Infocom)
Infidel (Infocom)
Stationfall (Infocom)
Zork series (Infocom)
Strange Odyssey (Scott Adams/Adventure International)

Have you ever tried an Infocom? No? Well, if you own a disk drive and would like to try something different then get an Infocom while you still can. Miles Better Software and Derek Fern still have a few, and Page 6 have Zork I. You never know, in twelve months we may be seeing your tales of adventure on these pages.

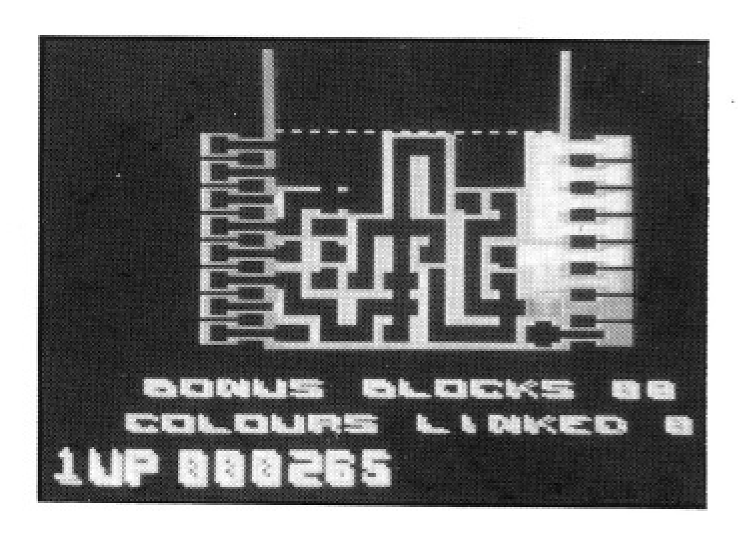
Anyway, that's basically the story of my progression with that 'classic' Atari 8-bit. It has kept me fascinated (and frustrated) for eight years now. I think it always will.

by Mark Stinson

DISK BONUS

COLOURTRIS

by Andy Guillame



A unique and challenging variant of a classic

Another Tetris-like puzzle game but this time with a twist. The object of the game is to form a link from the right side of the play area to the left. On the right side are eight colour pods with their left sides open. Various pipe sections fall down the screen and the player has to position these in the most strategic places to form the required number of links per level. An unbroken path from right to left must be formed for the colour to flow through to the receptors on the left hand side. Use joystick left/right to move the blocks and down to drop quickly.

Play continues until a block is placed above the level of the dotted line at the top of the play area. Each colour pod in turn will then release its contents to flow through whatever pipe section is placed next. Players score for every block that a colour flows through so a long windy path will score more than going straight across. The next 12 pipe sections to come are shown at the bottom of the screen, with the very next one highlighted at the right with a flashing box around it.

If the required number of links is not reached then the player loses one of his three credits until all are lost and the game ends. There is no in-game pause mode (to discourage blatant cheating!) but the game will wait indefinitely at the Entering Level screen until the fire button is pressed.

The game features one player and two players simultaneously, and has separate High score tables for both modes. Press OPTION at the intro screen to see the High score table, and SELECT to define the number of players. In two player mode both players compete against each other to complete each screen. Player one is RED and player two is BLUE and they share the three game credits, but score independently.

COLOURTRIS is the BONUS on the Issue 65 disk which also contains all of the programs from this issue ready to run. Disk subscribers will have received their copy with the magazine but the disk is available separately for £2.95 from Page 6. Send a cheque or postal order to PAGE 6, P.O. BOX 54, STAFFORD, ST16 1TB or order by phone using your credit card on 0785 213928

LITTLE MEXICAN

A neat little amusement by Andre Kos written in Turbo Basic

This is a nice dice game I've learned in the pub. In this version you can play with up to 4 friends or against the Atari or against Ataris individual chips! The object of the game is simple - you don't have to win as long as you don't lose! Sounds easy? Well the rules are quite easy as well.

- every round you play for 1 point
- you are not supposed to get that point
- this point doubles every time someone throws a mex
- the point(s) go to the person or computer(part) who throws the lowest score
- this score is calculated high dice low dice
- doubles are extra high
- the highest you can throw is a mex, which is 2 and 1
- if you lose a round you can open the next one
- the person who opens a round decides how many throws each can have (up to 3)
- when you are stuck with 6 points you are balancing on the edge and about to lose with the very next point
- when you are the first one to lose it's your job to get the drinks while your mates finish playing.
- only one person can lose a round, on equal throws you throw again

MEX is written in TURBO BASIC but I suppose that about everybody has a copy of that by now. And if not order it at once!! It's available at the Page 6 PD library. You can't compile the program, unless you change the routine that reads in the dice shapes but I hardly ever compile my programs because I very often want to adjust them. With an uncompiled program changes are made and tested very quickly.

```
QK 1 REM *****************************
IY 2 REM *            MEX            *
MV 3 REM *      by Andre Kosmos      *
IY 4 REM * ------------------------- *
TR 5 REM *         TURBO BASIC       *
JA 6 REM * ------------------------- *
NR 7 REM * NEW ATARI USER - DEC 1993 *
QR 8 REM *****************************
NO 9 REM
XO 10 EXEC INIT
BP 20 # MAIN
YS 30 EXEC ROLL
RK 40 REPEAT
PG 50 DX=DX1:DY=DY1:EXEC DICE
RQ 60 V1=W
QH 70 DX=DX2:DY=DY2:EXEC DICE
RX 80 V2=W
HF 90 EXEC SCORE
HQ 100 UNTIL SC=1000
IY 110 EXEC PLAYERS
OU 120 PL=SP
GN 130 FOR I=1 TO SP
UD 140 POSITION 21,I*4-1;? "┌──────┐";
QT 150 POSITION 21,I*4:? "│██████│";
ZJ 160 POSITION 21,I*4+1:? "└──────┘";
GF 170 NEXT I
WD 180 ST=RAND(SP)+1
JU 190 --
PJ 200 REPEAT
NL 210 WED=1:OPZET=0:LAAG=2000
OH 220 NOG=PL
GX 230 FOR J=1 TO SP
RN 240 P=ST+J-1:IF P>SP THEN P=P-SP
UX 250 IF STAND(P)<7
NN 260 IF P>=CFLAG
WK 270 EXEC CHIP
NC 280 ELSE
CY 290 EXEC MENS
IK 300 ENDIF
MA 310 NOG=NOG-1
VB 320 IF SC<LAAG THEN LAAG=SC
WC 330 IF SC=1000 THEN WED=WED*2
IS 340 ENDIF
GN 350 NEXT J
UH 360 EXEC LAAGSTE
HG 370 FOR J=1 TO SP
YK 380 POSITION 34,J*4:? "      ";
GV 390 NEXT J
GS 400 POSITION 13,2:? "█"
AC 410 UNTIL PL=1
JJ 420 --
GQ 430 FOR I=1 TO SP
AO 440 IF STAND(I)<7 THEN WIN=I
GE 450 NEXT I
KR 460 RESTORE #WINDAT
QJ 470 POSITION 27,WIN*4+1:? " WINNER "
WC 480 DO
ZX 490 READ NAAM$,F
LB 500 IF NAAM$="◘" THEN RESTORE #WINDAT:
   READ NAAM$,F
ZL 510 POSITION 28,WIN*4+1:? NAAM$
SD 520 SOUND 0,F,6,4:PAUSE 2:SOUND 0,0,0,
   0
QV 530 P=PEEK(53279)
QE 540 IF P<>7 THEN EXIT
RI 550 LOOP
RV 560 IF P<>6 THEN GO# EIND
WD 570 SOUND 0,0,0,0
QU 580 FOR I=1 TO SP*4+1
XY 590 POSITION 21,I:? "                  "
FW 600 NEXT I
GO 610 FOR I=1 TO SP
MI 620 SCORE(I)=0:STAND(I)=0
GC 630 NEXT I
EG 640 GO# MAIN
JR 650 --
OM 660 PROC DOING
PM 670 FOR S=15 TO 0 STEP -0.3
ES 680 SOUND 0,P*50,14,S
KK 690 NEXT S
VP 700 ENDPROC
JK 710 --
HM 720 PROC JA_NEE
WT 730 POKE 764,255
PW 740 REPEAT
MW 750 GET KEY
ID 760 UNTIL KEY=89 OR KEY=78
WD 770 ENDPROC
JY 780 --
AE 790 PROC CHIP
ZG 800 POSITION 34,P*4
QJ 810 ? "$--%"
KV 820 EXEC DOING
ZQ 830 POSITION 13,22:? " ";
UF 840 PAUSE 50
GL 850 IF OPZET=0
KP 860 FOR B=1 TO 3
OU 870 POSITION 13,22:? B;
AM 880 EXEC GOOI
UP 890 OPZET=B
HF 900 IF OPZET<3
BT 910 IF B=1 AND SC>60 THEN B=3
OR 920 IF B=1 AND SC>50 THEN IF RAND(NOG)
   THEN B=3
YO 930 IF SC>100 THEN B=3
CB 940 IF B=2 AND SC>60 AND RAND(3) THEN
   B=3
JA 950 ENDIF
VR 960 PAUSE 80
DV 970 NEXT B
HS 980 POSITION 13,2:? CHR$(OPZET+176)
NL 990 ELSE
UL 1000 FOR B=1 TO OPZET
QF 1010 POSITION 13,22:? B;
GO 1020 EXEC GOOI
KL 1030 IF SC>LAAG THEN B=3
UA 1040 IF SC>100 AND NOG>1 THEN B=3
VS 1050 IF SC>60 THEN IF RAND(NOG) THEN B
   =3
JB 1060 IF SC=LAAG AND SC>60 THEN B=3
YG 1070 PAUSE 80
CO 1080 NEXT B
FT 1090 ENDIF
WD 1100 PAUSE 50
YH 1110 ENDPROC
VM 1120 --
NO 1130 PROC MENS
TX 1140 POSITION 34,P*4
LV 1150 ? "$--%"
UM 1160 EXEC DOING
DL 1170 POSITION 13,22:? " ";
GR 1180 POKE 764,255
OU 1190 GET KEY
OY 1200 IF OPZET=0
UI 1210 FOR B=1 TO 3
QM 1220 POSITION 13,22:? B;
GV 1230 EXEC GOOI
XF 1240 OPZET=B
QS 1250 IF OPZET<3
TA 1260 POSITION 27,P*4+1:? "throw again?
   ";
UR 1270 EXEC DOING
RE 1280 EXEC JA_NEE
KA 1290 POSITION 27,P*4+1:? "
   ";
XY 1300 IF KEY<>89 THEN B=3
FB 1310 ENDIF
CC 1320 NEXT B
MY 1330 POSITION 13,2:? CHR$(OPZET+176)
HE 1340 ELSE
VG 1350 FOR B=1 TO OPZET
RA 1360 POSITION 13,22:? B;
```

continued ☛

LITTLE MEXICAN

```
HJ 1370 EXEC GOOI
GG 1380 IF B<OPZET
TL 1390 POSITION 27,P*4+1:? "throw again?
    ";
QK 1400 EXEC JA_NEE
JG 1410 POSITION 27,P*4+1:? "
    ";
PD 1420 IF KEY<>89 THEN B=OPZET
FJ 1430 ENDIF
CK 1440 NEXT B
FP 1450 ENDIF
ZC 1460 ENDPROC
WH 1470 --
NV 1480 PROC LAAGSTE
QG 1490 LOW=20000
YB 1500 OST=ST
DF 1510 REPEAT :A=0
VR 1520 FOR I=1 TO SP
UT 1530 IF SCORE(I)<LOW AND (STAND(I)<>7)
     THEN LOW=SCORE(I):ST=I
FL 1540 NEXT I
ZI 1550 EXEC STAND_OFF
ND 1560 UNTIL A=1
VD 1570 OLD=STAND(ST)
DQ 1580 STAND(ST)=STAND(ST)+WED
NL 1590 IF STAND(ST)>=7 THEN STAND(ST)=7:
    SCORE(ST)=1001:PL=PL-1
WW 1600 RESTORE #SCOREDAT
UP 1610 FOR I=0 TO STAND(ST)
CM 1620 READ ST1$
FK 1630 NEXT I
XI 1640 RESTORE #SCOREDAT
NY 1650 FOR I=0 TO OLD
DL 1660 READ ST2$
FW 1670 NEXT I
ES 1680 FOR I=1 TO 20
YP 1690 SOUND 0,I,0,4
TV 1700 POSITION 22,ST*4:? ST2$;
XI 1710 PAUSE 2
TA 1720 POSITION 22,ST*4:? ST1$;
XO 1730 PAUSE 2
FP 1740 NEXT I
HZ 1750 SOUND 0,0,0,0
VH 1760 PAUSE 100
TA 1770 IF STAND(ST)=7 THEN EXEC LOST
ZO 1780 ENDPROC
WT 1790 --
UZ 1800 PROC LOST
HE 1810 POSITION 21,ST*4-1:? "┌────┐"
JC 1820 POSITION 21,ST*4:? "|LOST|"
MW 1830 POSITION 21,ST*4+1:? "└────┘"
ZE 1840 ENDPROC
WJ 1850 --
LQ 1860 PROC GOOI
MN 1870 EXEC ROLL
AB 1880 EXEC SCORE
VA 1890 POSITION 34,P*4
RJ 1900 IF SC=1000
LK 1910 ? " mex ";
HK 1920 ELSE
CK 1930 ? " ";SC;" ";
FW 1940 ENDIF
AR 1950 SCORE(P)=SC
ZM 1960 ENDPROC
WR 1970 --
ED 1980 PROC SCORE
UZ 1990 SC=0
RF 2000 IF V1<V2 THEN A=V1:V1=V2:V2=A
LI 2010 SC=V1*10+V2
EL 2020 IF V1=2 AND V2=1 THEN SC=1000
OA 2030 IF V1=V2 THEN SC=V1*100
YP 2040 ENDPROC
VU 2050 --
DQ 2060 PROC PLAYERS
PV 2070 POSITION 22,4:? "HOWMANY PLAYERS"
    :POSITION 24,5:? "(1-5)"
QE 2080 REPEAT
OT 2090 GET KEY
RI 2100 SP=KEY-48
YY 2110 UNTIL SP>0 AND SP<6
AV 2120 POSITION 22,4:? "               "
FU 2130 POSITION 24,5:? "     "
VQ 2140 FOR I=1 TO SP
UB 2150 POSITION 2,2:? "Give name player
    ";CHR$(176+I)
NB 2160 POSITION 22,2:? "-->";
VK 2170 INPUT NAAM$
WZ 2180 POSITION 22,2:? "              ";
NB 2190 POSITION 34-LEN(NAAM$),I*4:? NAAM
    $
EU 2200 NEXT I
OP 2210 IF SP=1 THEN POKE 764,43
OV 2220 POSITION 2,2:? "      setup:     
    "
BL 2230 CFLAG=6
YF 2240 IF SP<5
QL 2250 POSITION 2,2:? "COMPUTER PLAYERS?
    "
VW 2260 POSITION 6,3:? "(Y/N)"
QF 2270 REPEAT
OU 2280 GET KEY
VQ 2290 UNTIL KEY=89 OR KEY=78
VH 2300 IF KEY=89 THEN EXEC CPSET
OU 2310 POSITION 2,2:? "      setup:     
    "
BF 2320 POSITION 6,3:? "     "
FI 2330 ENDIF
YV 2340 ENDPROC
WA 2350 --
GJ 2360 PROC CPSET
ZM 2370 POSITION 2,2:? "PLAY ME/MY CHIPS 
    "
QJ 2380 POSITION 6,3:? "(A/C)"
QN 2390 REPEAT
OA 2400 GET KEY
OZ 2410 UNTIL KEY=65 OR KEY=67
KQ 2420 IF KEY=65
CN 2430 POSITION 29,I*4:? "ATARI"
HP 2440 CFLAG=I:SP=I
HK 2450 ELSE
HV 2460 RESTORE #CPNAMEN
KR 2470 FOR J=I TO 5
RA 2480 READ NAAM$
OK 2490 POSITION 34-LEN(NAAM$),J*4:? NAAM
    $
FL 2500 NEXT J
UG 2510 CFLAG=I:SP=5
FJ 2520 ENDIF
YW 2530 ENDPROC
WB 2540 --
QC 2550 PROC ROLL
CO 2560 T1=RAND(20)+20
CY 2570 T2=RAND(20)+20
KF 2580 FOR T=1 TO 40
CP 2590 IF T1>T
VH 2600 DX=DX1:DY=DY1:EXEC DICE
DF 2610 V1=W
FL 2620 ENDIF
CJ 2630 IF T2>T
WW 2640 DX=DX2:DY=DY2:EXEC DICE
DY 2650 V2=W
FX 2660 ENDIF
KO 2670 NEXT T
ZN 2680 ENDPROC
WS 2690 --
YS 2700 PROC DICE
UG 2710 RESTORE #DICESHAPE
MS 2720 READ DICE$
FC 2730 W=RAND(6)+1
KE 2740 POKE 182,W
GD 2750 IF RAND(2):IF W=2 OR W=3 OR W=6 T
    HEN POKE 182,W+6:ENDIF
```

LITTLE MEXICAN

```
NE 2760 READ DICE$
RW 2770 SOUND 0,188,0,8
XD 2780 FOR I=0 TO 2
BA 2790 POSITION DX,DY+I
JD 2800 ? DICE$(I*3+1,I*3+3)
FJ 2810 NEXT I
HT 2820 SOUND 0,0,0,0
ZC 2830 ENDPROC
WH 2840 --
DP 2850 PROC STAND_OFF
WK 2860 FOR I=1 TO SP
HT 2870 IF SCORE(I)=LOW AND STAND(I)<>7 T
     HEN A=A+1
ZE 2880 IF SCORE(I)<>LOW THEN SCORE(I)=11
     11
GH 2890 NEXT I
JJ 2900 IF A<>1
EJ 2910 POSITION 6,2:? "STAND OFF"
OD 2920 FOR S=15 TO 0 STEP -0.1:SOUND 0,S
     *13,10,5:NEXT S
HD 2930 EXEC GETST
WQ 2940 FOR J=1 TO SP
UJ 2950 P=ST+J-1:IF P>SP THEN P=P-SP
VZ 2960 IF SCORE(P)=LOW
UW 2970 POSITION 34,P*4:? "$--%"
LG 2980 IF P<CFLAG
PL 2990 GET KEY
GO 3000 ELSE
UK 3010 PAUSE 10
FA 3020 ENDIF
LN 3030 EXEC ROLL
ER 3040 SC=V1+V2
AB 3050 SCORE(P)=SC
KG 3060 POSITION 34,P*4:? " -";SC;"-"
FP 3070 ENDIF
GA 3080 NEXT J
DX 3090 POSITION 6,2:? " setup:  "
EW 3100 ENDIF
YJ 3110 ENDPROC
VO 3120 --
KO 3130 PROC GETST
YQ 3140 ST=OST
PY 3150 REPEAT
GT 3160 ST=ST-1
MC 3170 IF ST=0 THEN ST=SP
YR 3180 UNTIL SCORE(ST)=LOW
ZH 3190 ENDPROC
VK 3200 --
NZ 3210 PROC INIT
GD 3220 FNT=PEEK(106)-4:POKE 106,FNT
BI 3230 GRAPHICS 0
QW 3240 MOVE $E000,FNT*256,1024
RB 3250 RESTORE #FONTDAT
CI 3260 POKE 756,FNT
EN 3270 FOR I=FNT*256+32 TO FNT*256+63
BI 3280 READ A:POKE I,A
FW 3290 NEXT I
JE 3300 FOR I=FNT*256+8 TO FNT*256+23
AP 3310 READ A:POKE I,A
FD 3320 NEXT I
DP 3330 POKE FNT*256+107,255
TR 3340 POKE 710,$E0:POKE 709,14
EH 3350 POKE 712,$90:POKE 707,$34
OT 3360 FOR I=704 TO 706:POKE I,$90
FS 3370 NEXT I
RN 3380 POKE 53248,132:POKE 53256,3:POKE
     53261,255
WJ 3390 POKE 53249,161:POKE 53257,3:POKE
     53262,255
MH 3400 POKE 53250,193:POKE 53258,3:POKE
     53263,240
AY 3410 POKE 53251,0:POKE 53259,3:POKE 53
     264,224
NR 3420 POKE 623,1
PC 3430 POKE 752,1
```

```
SI 3440 DIM DICE$(9),NAAM$(7),STAND(5),SC
     ORE(5),ST1$(4),ST2$(4)
WL 3450 RESTORE #DLIDAT
TU 3460 FOR I=$0600 TO $061D
BJ 3470 READ A:POKE I,A
FX 3480 NEXT I
HZ 3490 DX1=6:DY1=10
UD 3500 DX2=12:DY2=14
JW 3510 POSITION 0,0:? "┏━━━━━━━━━━━━━━━━
     ━━━┓";
JP 3520 FOR I=1 TO 19
KK 3530 POSITION 0,I
KH 3540 ? "┃                                ┃"
FQ 3550 NEXT I
FE 3560 POSITION 0,I:? "┗━━━━━━━━━━━━━━━━
     ━━━┛";
RU 3570 POSITION 4,5:? "▼▼▀ ▄▀▼▲▌
     "
PU 3580 POSITION 3,6:? "▲▲▼▀ ▀▀ ▌"
WI 3590 POSITION 2,7:? "▼ ▀▀ ▼"▼▲"
LO 3600 POSITION 0,21:? "┬┬┬┬┬┬┬─────────┬┬
     ┬┬┬┬┬"
PM 3610 POSITION 0,22:? "┼┼┼┼┼┼ THROW: ┼┼
     ┼┼┼┼"
FE 3620 POSITION 0,23:? "┴┴┴┴┴┴┴─────────┴┴
     ┴┴┴┴┴";
BI 3630 DPOKE 512,$0600
OO 3640 DL=DPEEK(560)
KN 3650 POKE DL+14,130:POKE DL+17,130
HD 3660 POKE DL+18,130:POKE DL+21,130
IK 3670 POKE $D40E,192
ZO 3680 ENDPROC
XK 3685 --
SF 3690 # EIND
YR 3695 POKE $D40E,64
AA 3700 SOUND %0,%0,%0,%0
GA 3710 FOR I=53248 TO 53251
RS 3720 POKE I,0
FO 3730 NEXT I
OB 3735 POKE 106,FNT+4
BV 3740 GRAPHICS 0
JM 3750 POSITION 14,5:? "┏━━━━━━━━┓"
HV 3760 POSITION 14,6:? "┃GOODBEY┃"
QR 3770 POSITION 14,7:? "┗━━━━━━━━┛"
LA 3780 RUN "D:AUTORUN.BAS"
WV 3790 --
ZX 3800 # CPNAMEN
MP 3810 DATA PIA,ANTIC,GTIA,POKEY
DJ 3820 # DICESHAPE
AI 3830 DATA ,    •    ,  •   •  ,  • • •
     ,• •   • •,• • • • •,• •• •• •,,•
     •,•   •   •,,,•••   •••
TQ 3840 # SCOREDAT
DO 3850 DATA ████,I███,II██,III█,IIII,&'!
     ",EDGE,LOST
RO 3860 # WINDAT
AG 3870 DATA WINNER,1,WINNER,2,WINNER,3,W
     INNER,4
MV 3880 DATA WINNER,5,WINNER,6,WINNER,5,W
     INNER,4
PU 3890 DATA WINNER,3,WINNER,2,W,1
FR 3900 # FONTDAT
ZE 3910 DATA 6,12,24,63,24,12,6,0
IO 3920 DATA 21,42,84,248,84,42,21,0
RA 3930 DATA 24,24,24,24,31,255,248,24
PX 3940 DATA 24,24,24,31,255,248,24,24
OU 3950 DATA 24,24,31,255,248,24,24,24
NR 3960 DATA 24,31,255,248,24,24,24,24
LA 3970 # DLIDAT
IT 3980 DATA 72,173,11,212,201,55,240,8,2
     01,71,208
CD 3990 DATA 8,169,96,208,6,169,72,208,2,
     169,0,141,10,212,141,3,208,104,64
```

ANDY GUILLAME's MINI TURBOS

Hot on the heels of last issue's mini programs comes this new set of minis written in turbo basic. Remember, a mini is something that you only need spend five minutes or so typing in and if you don't like the result you haven't wasted too much time and effort. Try these for some nice graphics effects.

```
MT 5 REM WATERFALL by A.Guillaume
XK 10 GRAPHICS 10:SP=6:C=8:L=0:FOR N=705
   TO 712:POKE N,(C*16)+L:L=L+2:NEXT N
AE 20 FOR X=0 TO 79:C=RAND(8)+1:ST=RAND(S
   P)+2:COLOR C:PLOT X,0
AE 30 FOR Y=0 TO 191 STEP ST:COLOR C:DRAW
   TO X,Y:C=C+1:IF C>8 THEN C=1
CH 40 NEXT Y:DRAWTO X,191:NEXT X
WR 50 S=PEEK(712):-MOVE 705,706,7:POKE 70
   5,S:PAUSE 0.1:GOTO 50
```

This first mini is WATER which produces an animated display of a waterfall. It draws lines down a GR.10 screen and then colour cycles to achieve simple but effective animation. Line 50 is the magic one, using Turbo Basic's most powerful feature, the MOVE command to shift the data in the colour registers. Change C in Line 10 to alter the colour of the screen and SP to alter the number of parallax bands. (i.e. number of different speeds of movement down the screen available). Try increasing SP to 20+ to bring forth an unstoppable flood!

```
OU 5 REM SNOWSTORM by A.Guillaume
SG 10 GRAPHICS 10:FOR N=707 TO 712:POKE N
   ,14:NEXT N:POKE 705,12:POKE 706,10
UH 20 FOR X=0 TO 79:C=RAND(8)+1:ST=RAND(4
   )+2:COLOR C:PLOT X,0
AE 30 FOR Y=0 TO 191 STEP ST:COLOR C:DRAW
   TO X,Y:C=C+1:IF C>8 THEN C=1
DG 40 NEXT Y:NEXT X
JF 50 S=PEEK(712):-MOVE 705,706,7:POKE 70
   5,S:PAUSE 1:GOTO 50
```

The next program, SNOW, is virtually the same as Waterfall but with a different colour palette, a lower SP value and slower colour cycling (e.g. the PAUSE statement in Line 50). These changes suit to produce a seasonal snowstorm. As before, raise SP and decrease the PAUSE length to create near-blizzard conditions!

```
JE 5 REM BOUNCE by A.Guillaume
PU 10 GRAPHICS 0:DL=DPEEK(560):POKE DL+3,
   98:FOR N=DL+6 TO DL+28:POKE N,34:NEXT
   N:POKE 203,1:POKE 204,0
IA 20 FOR N=0 TO 34:READ B:POKE 1700+N,B:
   NEXT N:FOR N=0 TO 19:READ B:POKE 1536+
   N,B:NEXT N:DPOKE 546,1700
JF 30 DATA 72,138,72,198,203,208,22,169,1
   ,133,203,230,204,166,204,189,255,5,141
   ,5,212,224,20,208,4
UF 40 DATA 169,0,133,204,104,170,104,76,2
   26,192
LZ 50 REM  BOUNCE   DATA 8,11,14,0,2,3,
   4,5,6,7,7,6,5,4,3,2,0,14,11,8
WJ 60 REM  SINEWAVE  DATA 0,3,5,6,7,7,7,
   6,5,3,0,13,12,11,10,10,10,11,12,13
```

The next mini *(above)* uses a Vertical Blank Interrupt to bounce your screen up and down in normal command mode. BOUNCE pokes a machine code routine into page 6 at location 1700. It also sets Vertical Scroll Enable on all of the lines of the Display List and pokes a set of Scroll Data into locations 1536 to 1555. The VBI is enabled and the routine takes

```
PC 5 REM WHIRLPOOLS by A.Guillaume
UU 10 DEG :GRAPHICS 10:CC=RAND(16):L=0:FO
   R N=705 TO 712:POKE N,(CC*16)+L:L=L+2:
   NEXT N:A=8:D=0:R=0:C=8
ZI 20 COLOR C:XX=39+(SIN(D)*R):YY=95+(COS
   (D)*(R*2)):CIRCLE XX,YY,2,4:PAINT XX,Y
   Y:R=R+0.1:D=D+A
HS 30 C=C-1:IF C=0 THEN C=8
HR 40 IF XX>10 AND XX<70 AND YY>10 AND YY
   <180 THEN 20
LC 50 S=PEEK(712):-MOVE 705,706,7:POKE 70
   5,S:PAUSE 2:GOTO 50
```

Mini number 3, WHIRL *(left)* , produces a nice swirly effect, again through colour cycling a GR.10 screen. In this one, alter the value of A in Line 10 to produce different patterns. This refers to the amount of angle to step through each time the loop operates.

the Scroll Data one byte per Vertical Blank and sets VSCROL at 54277 accordingly. Before running you must select either a Bouncing screen or a Sinewave pattern by selecting either of lines 60 or 70 and putting a REM on the other (i.e. so that only one data line is active). For reference, the assembly language of the VBI is below. It uses page 0 locations 203 and 204. 203 for a counter (number of VB's per scroll) set in the routine to 1 for fastest speed every time it decreases to 0. 204 is used as an index register to the Scroll Data (values range from 1-20) and is loaded into the X register during the routine. The Data is then loaded into the accumulator and stored in location 54277 before the VBI is exited.

```
VBI:    PHA          ;Push A
        TXA          ;X into A
        PHA          ;Push A
        DEC 203      ;Counter
        BNE EXIT     ;Exit if <> 0
        LDA #1       ;1 into A
        STA 203      ;Zero counter
        INC 204      ;Index +1
        LDX 204      ;Index into X
        LDA 1536,X   ;Get Data
        STA 54277    ;VSCROL
        CPX #20      ;End of data?
        BNE EXIT     ;If no, Exit
        LDA #255     ;255 into A
        STA 204      ;Reset Index
EXIT:   PLA          ;Pull A
        TAX          ;A into X
        PLA          ;Pull A
        JMP 49378    ;XITVBI
```

A MINI MANDELBROT PROGRAM

The Turbo Basic program MANDY generates the Mandelbrot set across given coordinates. To avoid a long and complex discussion of the way that this is achieved simply think of your screen as a piece of graph paper. Each coordinate is plotted with a colour depending on how many times the program has to loop around the formula before the maximum value is reached. If the program doesn't reach the maximum value by the time it's got to it's loop limit (i.e. number of Iterations) then the coordinate is plotted in Base colour. This is repeated for each point and is thus a slow process with typically 100 loops per pixel (Try using the Turbo Compiler to speed up the program). This is a very short program and is devoid of some obvious features, such as turning the display off to increase speed etc., but as an after-thought I have added a line to Colour cycle the display and Save, Load lines for your use. Remember to change the filename for each picture. Also Line 130 is there just to stop the computer returning to GR.0 upon completion. Below the main variables are listed with their use and default values.

RX	3	Right X position
LX	-3	Left X position
TY	3	Top Y position
BY	-3	Bottom Y position
WID	191	Width of GR. mode 1
HEI	79	Height of GR. mode 1
ITS	20	Number of Iterations
RD	2.82	Maximum value of result
MAXCOL	8	Maximum GR. mode colour
BASCOL	7	Base colour 1

```
VF 5 REM MANDELBROT MINI by A.Guillaume
CK 10 GRAPHICS 10:C=8:L=0:FOR N=705 TO 71
   2:POKE N,(C*16)+L:L=L+2:NEXT N:RX=3:LX
   =-3:TY=3:BY=-3:ITS=20:RD=2.82
QD 20 WID=79:HEI=191:MAXCOL=8:BASECOL=7:X
   STE=(RX-LX)/(WID+1):YSTE=(BY-TY)/(HEI+
   1):XMUL=1/XSTE:YMUL=1/YSTE
FX 30 FOR X=LX TO RX STEP XSTE:FOR Y=TY T
   O BY STEP YSTE:C=0:COL=0:OZR=0:OZI=0:S
   X=(X-LX)*XMUL:SY=(Y-TY)*YMUL
PD 40 IF SX<0 OR SX>WID OR SY<0 OR SY>HEI
    THEN 90
EN 50 NZR=((OZR^2)-(OZI^2))+X:NZI=((OZR*O
   ZI)*2)+Y:OZR=NZR:OZI=NZI:C=C+1:DI=SQR(
   (NZR^2)+(NZI^2)):COL=(COL+1) MOD MAXCO
   L
MV 60 IF C>ITS THEN COL=BASECOL:GOTO 80
SS 70 IF DI<=RD THEN 50
KA 80 COLOR COL+1:PLOT SX,SY
DL 90 NEXT Y:NEXT X
LN 100 REM COLOUR CYCLE S=PEEK(712):-MO
   VE 705,706,7:POKE 705,S:PAUSE 1:GOTO 1
   00
CO 110 REM SAVE SCREEN SCN=DPEEK(88):OP
   EN #1,8,0,"D:MAND1.FLP":BPUT #1,SCN,76
   80:CLOSE#1
EP 120 REM LOAD SCREEN SCN=DPEEK(88):OP
   EN #1,4,0,"D:MAND1.FLP":BGET #1,SCN,76
   80:CLOSE#1
MT 130 GOTO 130
```

RX, LX, TY and BY are the coordinates of the screen on the mandelbrot set, the screen being automatically re-scaled with the use of XSTE, YSTE, XMUL and YMUL, to enable zooming in. The program will work in any graphics mode with changes to the appropriate variables as described above. The smaller the screen box size is made the further you are zooming in and the amount of iterations, ITS, has to be increased accordingly to keep resolution. Unfortunately this means that the calculation time sky-rockets but the end results are worth waiting for. To do a quick preview of the whole picture, just decrease the Width(WID) and Height(HEI) of the drawing screen; a scaled down version of the entire screen is produced. An alternative is to set up a lower Graphics mode, i.e. GR.5, and adjust WID, HEI, MAXCOL and BASCOL to suit.

SEND A CONTRIBUTION!

Remember it's your contributions that keep New Atari User alive. Whether it's a set of mini programs like those from Andy Guillame or a comprehensive technical article, or an arcade game we want to be able to give other Atari users the opportunity to enjoy your work.
Look out your programs, polish them up and send them in!

Ian Finlayson's

TUTORIAL TIME

LIST YOUR VARIABLES

For this issue I have a utility for BASIC programmers. If you are writing long programs it is quite easy to lose track of all the variables you have used and you may reuse a name that has already been allocated. This can cause problems that are difficult to trace. With this little subroutine you can quickly list all the variables that are currently in use (including the five variables used by the subroutine itself). The list can be quite long - BASIC allows you 128 variables in a program!

THE LISTING

The line numbering in the subroutine starts at 30000 so that it can be ENTERed above your developing program. If you are already using numbers as high as this you will have to renumber it closer to 32767 - the highest line number that Atari BASIC will accept.

Line 30100 dimensions a string WORD$ which will contain the individual variable names. I have chosen 10 as a sensible maximum number of characters in a variable name. You can change this to a higher or lower number to suit the length of variable names that you use.

Line 30110 looks in memory to calculate the starting position of the variable name table, and line 30120 does the same to give the address of the end of variable table +1.

Line 30130 sets the counter Z to 1 and starts a FOR ... NEXT loop through all the characters in the table.

Line 30140 peeks the current position in the variable table and recovers the value of the character in variable CH.

If the character value is greater than 127 it signifies that it is the last character of the variable name. All the last characters of the variables are stored as inverse characters so that BASIC knows where each variable name ends. Line 30150 looks for these end of word characters and if one is found it is reduced by 128 to turn it back into a normal character. It is then added to WORD$ as the last character and WORD$ is then printed to the screen. If you want printed output just change the ? to LP. (or LPRINT) and it will go to your printer.

If the value which was read in line 30140 was less than 128 it represents a normal character. This is added as the Zth character of WORD$ in line 30160. The counter Z is then incremented by one before the NEXT in line 30170 causes a loop back to find the next character.

USING THE ROUTINE

To use this routine with your developing BASIC program it must be LISTed to disk or tape and ENTERed to join up with your program. It can be invoked by typing GOTO 30000 (or

```
UG 30000 REM ***************************
DS 30001 REM *      TUTORIAL TIME       *
CU 30002 REM *  LIST YOUR VARIABLES     *
CT 30003 REM *            BY            *
OL 30004 REM *      Ian Finlayson       *
ML 30005 REM *--------------------------*
JC 30006 REM * NEW ATARI USER - DEC 93 *
VP 30007 REM ***************************
QO 30100 DIM WORD$(10)
VE 30110 V1=PEEK(130)+256*PEEK(131)
ZI 30120 V2=PEEK(132)+256*PEEK(133)
VQ 30130 Z=1:FOR CTR=V1 TO V2-1
EL 30140 CH=PEEK(CTR)
MO 30150 IF CH>127 THEN WORD$(Z)=CHR$(CH-
   128):? WORD$:Z=1:GOTO 30170
JL 30160 WORD$(Z)=CHR$(CH):Z=Z+1
MA 30170 NEXT CTR
```

G.30000) and will then print your variable list. Remember that the variable list will contain the variables from the subroutine. They are: WORD$, V1,V2, Z, CTR, CH. The position of these variables in the list will depend on when they were added to the listing. If your program was complete before you ENTERed the variable subroutine these variables will be on the end of the list, but if you then type in more program lines any new variables will appear below these variables in any subsequent list. To put it another way - the variables are listed in the order that they were added to the listing, not in the order they appear in the listing. Once you have finished development of your own program the lines from 30000 upwards should be deleted.

One slight snag with this routine occurs if you do a GOTO 30000 a second time without a reset or RUN command in between. The variable WORD$ is already dimensioned and will therefore generate an ERROR 9. There are two alternative ways to get round this. Either use GOTO 30110 for all calls to the variable lister after the first, or add an extra line 0 as follows:

```
0 GOTO 30000
```

This allows you to type RUN and use the variable lister as many times as you like bypassing your own program. Line 0 is easily deleted by typing "0" and RETURN when you want to run your program.

I hope you will find this straightforward routine is a useful tool for use during your own program development. If you have questions about it or other BASIC programming issues please write to me enclosing a SAE for a reply and I will try to help.

My address is

Ian Finlayson,
60 Roundstone Crescent, East Preston,
West Sussex BN16 1DQ

TARKUS & THE ORBS OF DOOM

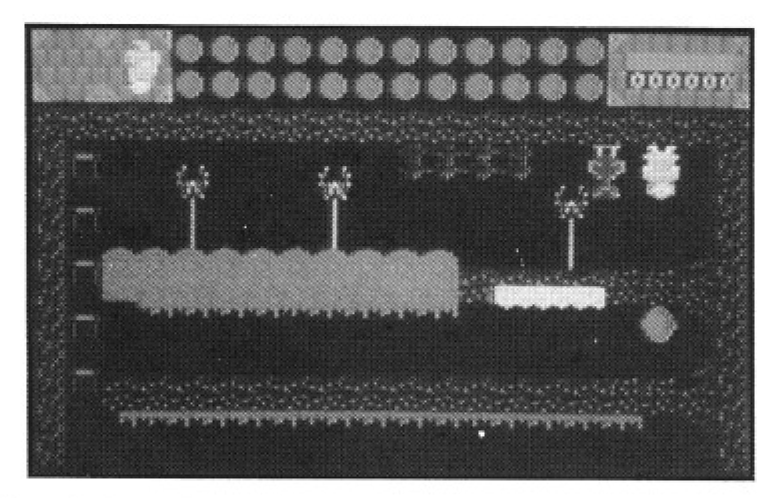
This time from Tiger Developments we have the sequel to Tarkus and the Crystal of Fear - titled **TARKUS AND THE ORBS OF DOOM** - together with a mind-bending puzzle called **THE CITADEL**. And all for under a fiver!

In his last adventure Tarkus uncovered the crystals of emotion which helped to make the world a happier place. Unfortunately the evil warlord on planet Zegron V has now constructed magical orbs of doom and is threatening to cast a deep depression over the otherwise cheerful inhabitants of Earth. Once again Tarkus and his pet chicken(!), Aquartarkus, are called upon to save the day ...

On each level of the game your objective is to locate a magical orb and take it, along with Tarkus and his feathered companion, to an exit point near the top left corner of the screen. The space bar toggles joystick control between the two characters, who have differing abilities. Tarkus can run and jump but his energy is depleted by contact with water. Aquartarkus is quite content in the wet but sadly unable to jump. By combining the actions of the two heroes and utilising lifts, switches and doors, you must work out the correct sequence of events to solve each level. Access passwords are given after each screen to avoid frustration. Overall Tarkus II is a fun, addictive and challenging game.

In case you tire of Tarkus and his chicken, The Citadel is provided to give your brain an additional work-out. In the same style as several recent German puzzle games, the player's aim here is to guide a character to an exit position of a room viewed from overhead. This isn't easy since there are boulders, bombs, pits, blocks, teleports and other intriguing problems to contend with. There's also constant time pressure, though speed and dexterity are not vitally important - each screen can only be solved by carefully analysing (or experimenting with) the possibilities to find the correct procedure. Graphics and sound are generally appropriate, with some nice special effects in several places.

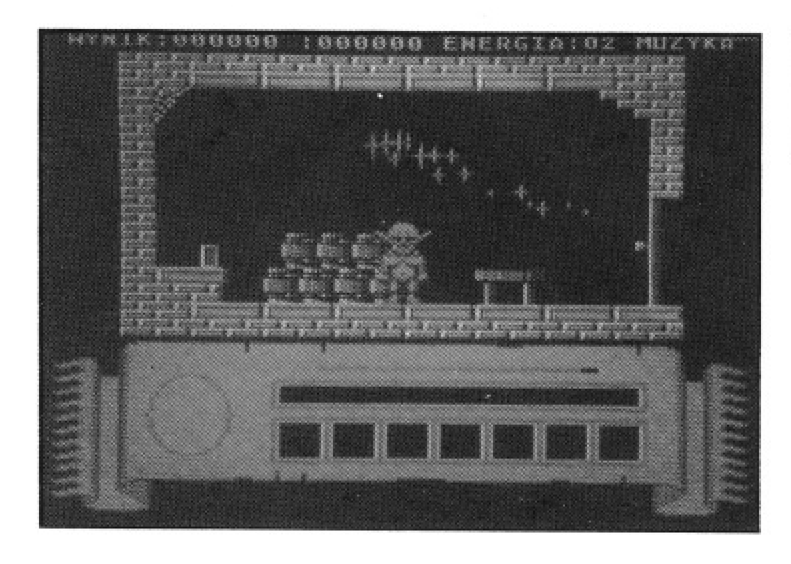
In a previous review I suggested that Tiger Developments improve their standards with every release - this opinion is certainly confirmed by their latest software. As well as forming the double, each game is available as a separate package. However, I can't think why anyone would want to miss out on either of these delights. Great stuff, let's have some more please!



Title:	**TARKUS II & THE CITADEL**
Publisher:	**Tiger Developments**
Price:	**£4.99 (£2.99 each)**
Format:	**Disk**

Reviewed by Paul Rixon

MIECZE VALDGIRA



Tiger Developments, who are well known for producing original games such as Tarkus and Lizard, have recently chosen to expand their range with imported titles from Polish software house ASF. Due to financial constraints the Polish text is not being translated but the company hope that Atari users will overlook this small irritation and appreciate the good quality of the software. A far greater source of frustration, in my opinion, is the ridiculously time-consuming software protection system (see Kult review).

MIECZE VALDGIRA is an arcade adventure with the usual mix of objects, nasties, platforms and topical scenery. The story - albeit rather a weak affair - involves the Emperor of Lizdrane who seems to think his life is in danger because a prophet has told him that a Prince will arrive with the sword of Valdgira and use it with unpleasant consequences. Sensibly, he's sent you to find the sword (or there may be more than one ...) and thereby ensure that this rumour can't become reality.

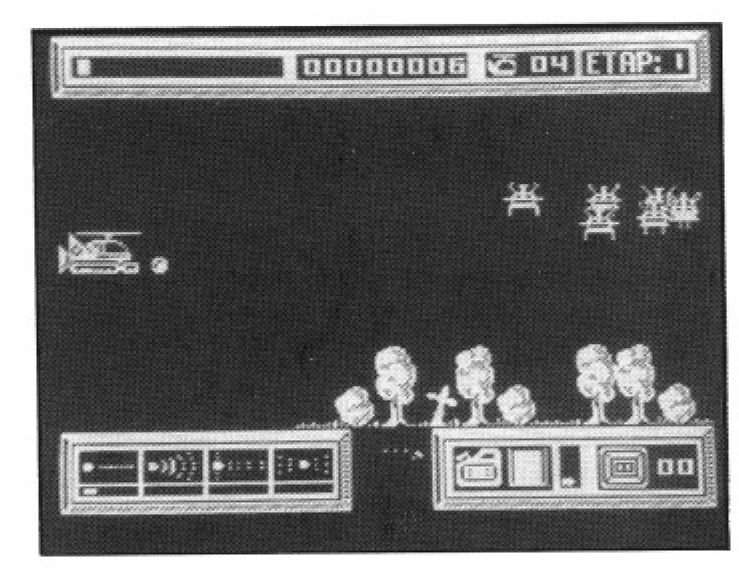
So off you go - bounding along the castle walls, up stairways, through passages and rooms - in search of useful items to help you complete the mission. The scenes flip in the top half of the screen as you wander around whilst a large status block below keeps you up to date with your inventory, strength level and occasional messages. Providing one of your seven carrying 'slots' is vacant, you can collect an adjacent object by simply pulling down on the joystick. To use an object, you again pull down on the stick and then select the required icon from the status block - if the item can be used, it will be! Item descriptions are provided to guide you as to where and when things should be used, though unless you have a Polish phrase book handy these may not be as useful as intended! An added problem is that almost every screen is initially occupied by a variety of strange flying nasty-matter. This drains your energy on contact so it's a good idea to spend time blasting a clear path ahead.

So far I haven't made too much progress with Miecze Valdgira, so it's difficult to quantify lasting appeal. The graphics and music certainly can't be criticised and the only negative feeling stems from the fact that some screen messages need to be understood - Tiger Developments may issue a translation sheet to alleviate this drawback.

Title:	**Miecze Valdgira**
Publisher:	**ASF (Poland)**
Supplier:	**Tiger Developments**
Price:	**£4.99**
Format:	**Disk**

Reviewed by Paul Rixon

KULT



Two challenges in one game! The first is, in fact, a security system common to all of Tiger Developments' latest software and intended to eliminate the temptation of unauthorised copying. To gain access you must have an A4 printout containing two grids of alphabetic characters and multi-coloured graphics symbols respectively. A paper template must be aligned over the first grid such that two characters displayed by the software on boot-up are visible through one of two holes in the template. The other hole reveals four symbols on the second grid which must then be input to the program via the joystick. If this seems time consuming, fiddly and more than a tad frustrating ... you're correct!

According to the story, Dark forces are gathering in a quiet corner of the Earth and the Beast has been recruiting disciples in order to spread a veil of evil over the planet - the usual stuff. Being one of the unbelievably good guys, it's up to you to zap the Beast's armies into oblivion.

KULT is basically a Zybex style shoot 'em up featuring high resolution (single-coloured) graphics, varying weapons, numerous nasties and the usual helping of special effects. Press the fire button and you're all set for 'Etap Numer 1' (that's right, no English translation - but it's doesn't actually pose a problem). Your attack helicopter appears to the left of the horizontally scrolling playfield whilst status panels above and below indicate your current weapon selection, fuel level, smart bombs, lives and score. Your helicopter automatically fires a continuous stream of bullets so the only controls of interest are those adjusting your vertical and horizontal position, with a view to avoiding the dangers of buildings, trees and oncoming projectiles.

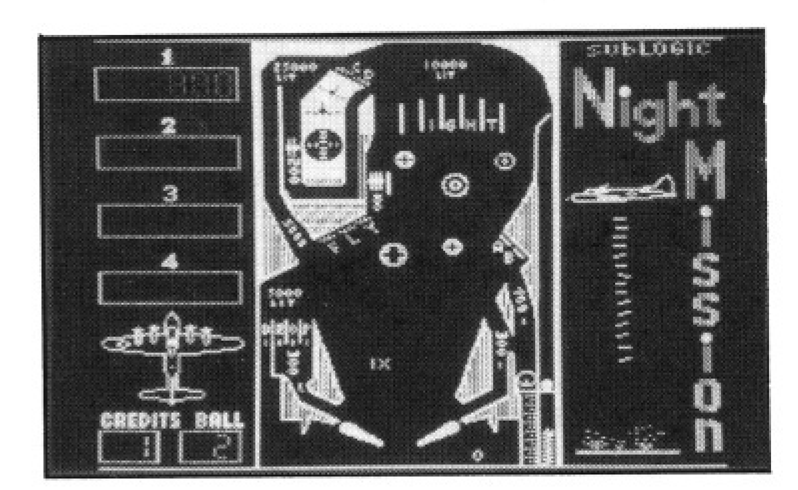
Expired baddies often leave a bonus in their wake - collecting this can earn you extra points, energy or weapons. Pressing the fire button alternates the weapon selection so you can choose one best suited to each particular wave of adversaries. It's important not to miss fuel icons as failing to replenish your reserve will result in loss of life. Before you can progress to the next level, an incredibly stubborn monster must be outwitted.

Shoot 'em up fanatics should be more than pleased with the arrival of Kult. The graphics are detailed (albeit rather dull), sound adequate, nasties plentiful, weapons extensive and overall playability well above average. Shame about that darned security grid!

Title:	**KULT**
Publisher:	**ASF (Poland)**
Supplier:	**Tiger Developments**
Price:	**£4.99**
Format:	**Disk**

Reviewed by Paul Rixon

NIGHT MISSION PINBALL



Mention SubLogic and most long-standing 8-bitters think immediately of the brilliant Flight Simulator II, but this is by no means the only 'classic' game they released. NIGHT MISSION PINBALL is another golden oldie from the specialists of simulation.

You only have to peek inside the box to realise that this is a game from a bygone age, when packaging was thought to be as important as the software it concealed. Housed in the sturdy, video-style box you'll find a twenty-five page 'adjustment' manual, quick reference playing guide, hi-score disk label and colour advertising sheets for Flight Simulator II products. Quality stuff this, but what about the game?

Night Mission Pinball, so named as its theme is a World War II night bombing run, can be viewed as both a straightforward arcade game and an advanced simulation. In its basic form the game simulates an arcade pinball machine with bumpers, stand-up targets, roll-overs, spinners and similar features. First you insert quarters (press Q) to give yourself credits, then hit the start button (press S) to play. Two joysticks are required - even in single player mode - to manoeuvre the right and left flippers, launch striker position and release mechanism. Keyboard inputs can be used instead but are not recommended for maximum playability. Hitting a key on the left side of the keyboard simulates bumping the machine on the left side, and a similar affect applies to the right. Careful not to TILT the machine though!

Advanced players should turn their attention to the adjustment manual which, as well as discussing such matters as machine inclination, restitution and tangential friction (or gravity, bounciness and stickiness!), describes some forty parameters which may be modified to suit the player's personal style. These range from tilt sensitivity and ball speed to sound effects.

The intricacy of the graphical design demands the highest resolution screen mode and, therefore, an unavoidably mono appearance. There may be extra colour through the artifacting technique, which is effective only on American VDUs. Nevertheless, the speed and realism of ball travel is most impressive - those gravity algorithms must have taken some working out! Sound is reasonable and makes use of the internal speaker on pre-XL machines.

If you enjoy pinball and haven't encountered Night Mission before, its appearance at such a low price is a real treat!

Title:	**NIGHT MISSION PINBALL**
Publisher:	**SubLogic**
Supplier:	**Page 6**
Price:	**£7.95**
Format:	**Disk**

Reviewed by Paul Rixon

THE ACCESSORY SHOP
ISSUE 65

CHRISTMAS PRESENTS!

NIGHT MISSION PINBALL



The ultimate arcade simulation with five bumpers, seven stand-up targets, nine rollovers, two spinners and much more. So realistic you have to insert a quarter before you can play. So true to life you can even tilt the computer! Night Mission Pinball offers ten different modes of play for 1 - 4 players. Forty user-adjustable parameters allow you to create your own custom games or redesign any play mode to your own specifications. Beautifully packaged and with an excellent manual, Night Mission Pinball will save you money by keeping you away from the arcades!

DISK ONLY **OUR PRICE £7.95**

This is the time of year when you can stock up on software that you have wanted to buy during the year. Show the Accessory Shop pages to mum and dad or to uncles and aunts and you might well end up with some great new games for Christmas. Of course there is no reason why you can't treat yourself for the New Year is there? And remember that the Accessory Shop is an essential part of New Atari User helping to keep your favourite magazine going - support us to help us support you.

MAKE THAT COMMITMENT

DRUID



Another classic in which, as Last of the Great Druids, you wander through the Dungeons of Acamantor with your mighty Golem by your side on a quest to destroy the four demon princes. As you delve deeper into the dungeons you will find chests containing spells of formidable power to aid you and Pentograms of Life which will heal and revitalise you. Excellent graphics and superb gameplay have made this one of the best arcade adventures on the Atari.

DISK ONLY **OUR PRICE £3.95**

FOOD FIGHT



Charley loves to eat. One day he visits the carnival and heads straight for the Food Fight contest. Help Charley hurl mounds of fabulous food at disgruntled chefs. Spinach, bananas, tomatoes, watermelon will be thrown about as you try and make the chefs retreat. You are after the giant ice cream cone that awaits if you make it across the screen. Enjoy the fight ... and the mess!

ROM **OUR PRICE £7.95**

HARDBALL

All the thrills of American baseball can be yours on a summer afternoon in the ballpark. Sit behind home plate, along the left field line, down the right field line or join the manager in the dugout. Look over the pitcher's shoulder as he throws the next ball. You control all the action of the batsmen, pitchers and fielders as you try and battle your way to the top of the league. An exciting game for one or two players.

ROM CARTRIDGE
OUR PRICE £7.95

ARCHON

A unique battle combining elements of fantasy with the strategy of the chessboard. Your men represent the forces of good and evil and when they each occupy the same square the board bursts into life with banshees, goblins and sorceresses. They cast spells, throw flames, even take on each other's shapes and characteristics. You can play the Light or the Dark either alone or with another player. A totally unique game.

ROM CARTRIDGE
OUR PRICE £7.95

BALLBLAZER

The year is 3097 and you are the contestant in the most competitive and by far the most popular sport in the universe. Jump immediately into head-to-head action against a friend or hone your skills against a selection of Droids. Either way, you're in for the match of the century! Excellent graphics and split screen action have made this one of the Atari classics.

DISK ONLY
OUR PRICE £3.95

THE COUNT

One of Scott Adam's famous graphic adventures in which you awake in an antique brass bed in a dank, desolate castle. It soon looks like you are going to meet a certain toothy Transylvanian Count who goes by the name of ... Dracula! Will you escape or become one of the living dead? An adventure with full graphics, moderate level for ages 10 to adult.

DISK ONLY
OUR PRICE JUST £2.95!

PLASTRON

Take your place in a small band of pirates out to steal fossil fuels from the biggest corporation in the galaxy. You must guide your shuttle craft along the surface of the planet Plastron to collect as much fuel as you can from the heavily defended mine zones and then rendezvous with the supply tank at the end of each level. Plastron got a good review in New Atari User and has some excellent graphics.

CASSETTE ONLY **OUR PRICE £2.95**

BATTLECRUISER

If you are a wargamer who has fought land battles before then you may need to learn new skills to do battle at sea. Battlecruiser gives you the opportunity to recreate naval engagements during Word War I between Great Britain and Germany or the World War II surface battles between Britain/France and Germany/Italy. There are 79 classes of ship to control as every aspect of famous battles is recreated. An extensive manual gives details of all of the ships and guides you through every aspect of play.

DISK ONLY **OUR PRICE £7.95**

More new software

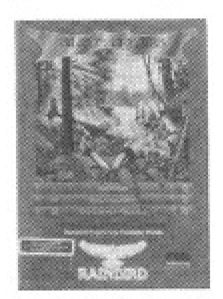
ROCKET REPAIR MAN



Buried somewhere in the underground maze of caverns of the planet Leskos are essential components of your Astro-ship. Get into your space suit, strap on your Jet Pack and begin the most terrifying descent imaginable. You must collect pieces of a rocket in which you can escape but beware the dreaded Neutino Ghosts and the Quark Phantoms out to stop you. Another neat game from Red Rat.

DISK ONLY **OUR PRICE £3.95**

SILICON DREAMS



Taking the role of Kim Kimberley you are a leading participant in the colonisation of Eden, a planet prepared for human habitation by an advance guard of intelligent robots who battle with the native and highly aggressive fauna. In this highly structured and realistic environment you must move your mind into the twenty-third century. Silicon dreams comprises three excellent graphics adventures - SNOWBALL, RETURN TO EDEN and THE WORM IN PARADISE from Level 9, the masters of adventure

DISK OR CASSETTE **OUR PRICE £5.95**

NEW YORK CITY



Welcome to The Big Apple. This hurried jungle of steel, concrete and glass bristles with fascinating sights and more than its share of danger. From the placid greenery of Central Park, there is no city in the world like New York, and boy are you about to find that out! As a visiting tourist you only have a limited time to see all the sights, but New York City has a little more excitement, a little more danger in store than a mere sightseeing trip to the zoo!

DISK ONLY **OUR PRICE £3.95**

ADVENTURE PACK

*Four of the famous Channel 8 text adventures on four cassettes for just £2.50!**

You get WAXWORKS, ARROW OF DEATH Part 1, ARROW OF DEATH Part 2 and THE GOLDEN BATON on four separate cassettes, each boxed, for just £2.50

It must surely be time for you to try your hand at adventure!

*Usual postage per order applies

GAUNTLET
THE DEEPER DUNGEONS

If you have the original Gauntlet disk then you will know how good the game is and will want to extend play with the Deeper Dungeons. Over 500 new dungeons are here for you to explore. This is the way to revive your interest in Gauntlet and play on for many more hours or days! This is a data disk only and requires the original Gauntlet disk.

DISK ONLY
OUR PRICE JUST £2.95

RAMPAGE

It's rough and tumble all the way as you control three incredibly nasty characters which bear a remarkable resemblance to King Kong, Godzilla and Wolf-man through an orgy of destruction in Chicago, New York and San Francisco. You have 150 days of destruction in 50 different cities. Time for some revenge!

DISK ONLY
OUR PRICE £3.95

THE E FACTOR

The E factor represents the amount of time the energy sources on the planets in our galaxy will last. Many planets need emergency fuel capsules delivered if they are to survive. You must plot the interplanetary course and guide your craft through the quadrants filled with obstacles such as space mines, alien fighters and spinning asteroids. Can you complete a mission and deliver your energy crystal before another planet calls on your services?

DISK ONLY
OUR PRICE £3.95

CROSSFIRE

You are alone in a deserted city surrounded by aliens who shoot lasers from every direction. Your movements are confined but you haven't given up. If you are to survive you'll have to concentrate on where the shots are coming from otherwise you'll be caught in the CROSSFIRE. One of those fairly simple yet highly addictive games.

CASSETTE ONLY
OUR PRICE £2.95

ATARI USER TOOLKIT

Now programmers without a disk drive can take advantage of programming aids normally the preserve of disk drive owners. The Toolkit adds several commands to Basic such as Delete a block of lines, Renumber programs, Change variable names, List Variables, Remove all REMs, Convert Hex to decimal and Print listings to Epson compatible printers. Just boot the tape and all these additional commands are ready to use with your next program.

CASSETTE ONLY **OUR PRICE £2.95**

AIR RESCUE

Peace is shattered as the Military Junta moves against the popular uprising. Civil war rages forcing expatriate Britons into hiding to escape the guns, tanks and missiles of the opposing armies. There is only one way to get them out ... Air Rescue! A cracking arcade game based on the classic Choplifter. Fly your copter and rescue your fellow countrymen but don't get shot down.

CASSETTE ONLY **OUR PRICE £2.95**

THE LIVING DAYLIGHTS

Control James Bond through eight fast and furious levels from Gibraltar to Afghanistan and you will encounter the SAS (friendly), the KGB (not so friendly) and enemy helicopters (very unfriendly!). Your are up against Brad Whittaker, international arms dealer and megalomaniac, Necros, his ruthless sidekick killer and Koshkov, the double dealing KGB General. You may fall in love with the beautiful Czech cellist Kara, but can you trust her?

DISK ONLY **OUR PRICE £3.95**

MONTEZUMA'S REVENGE

Wherever there's mind-bending mystery, hair-raising adventure and non-stop action, Panama Joe is sure to be there. In Montezuma's Revenge he gets more than he bargained for as you help him through 100 danger filled chambers in the Aztec emperor's fortress. The stakes? Priceless treasure. Finding the necessary keys, torches, swords and amulets is no easy task as Joe tries to avoid deadly snakes, spiders and bouncing skulls. Disappearing floors, bridges and laser walls are no picnic either!

DISK ONLY **OUR PRICE £3.95**

20 NEWLY FEATURED CASSETTES

YOURS FROM ONLY 95p EACH INCLUDING POSTAGE

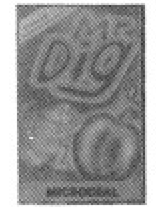
Prices start at £1.95 each and reduce according to how many you buy ... and you can mix these with our regular cassettes shown on the inside front cover

Now you have OVER 40 cassettes to choose from!



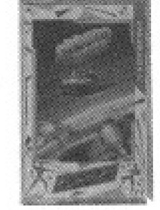
TWILIGHT WORLD

Enter the Twilight World. Equipped with the latest in anti-gravity pods and Laser weaponry, battle your way through each of the eleven dungeons defeating their fiendishly devious inhabitants along the way. A game from Atari themselves!



MR DIG

An old favourite in which Mr Dig has to dig for hidden food supplies in the 'Meanie' territory below ground. As he digs he can eat cherries or crush the Meanies with apples. Special treats earn extra points and a Magic Power Orb can kill all the Meanies.



SIDEWINDER

The original Sidewinder has you flying the high-tech Sidewinder hunter-killer helicopter through spectacular underground caverns, past the enemy defences and security systems to your home base on the hospitable surface. More great graphics from Zeppelin Games



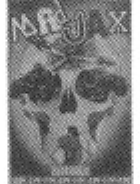
AZTEC CHALLENGE

At the ancient Mexican pyramid of Tenochtitlan the Aztec gods have demanded a human sacrifice. You are one of the chosen! Your only hope of escape is to survive a series of tests in which your agility and stamina are pushed to the limits. Over the centuries your race has developed amazing abilities in running, jumping and leaping - your only chance of surviving the epic Aztec challenge.



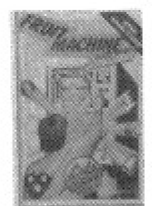
ON CUE

Control that cue ball! A challenging real life simulation which combines Pool and Snooker on the same cassette. An absolute must for both enthusiasts and beginners alike. If you have ever wanted to be at the Crucible taking part in the World Championships, now's your chance to practice.



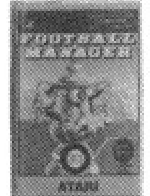
MAD JAX

Someone has been lobbing shells into your nice, cosy little domed city threatening to force the population out into the radioactive wastelands outside. Take up the fast action as you race your heavily armed buggy through the enemy defences. Fight off their forces and survive or your city dies with you.



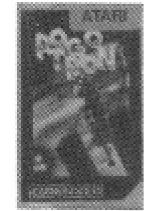
FRUIT MACHINE SIMULATOR

Code Masters version of the fruit machine that they claim is the first real fruit machine simulator. Features include Cash Box, Nudge Box (with Compu-Nudge and Nudge Bank), Skill Climb, Winning Streak, Cash Gamble, Holds and Mega-Holds, Skill Chances and Party Time Meter.



FOOTBALL MANAGER

Manage the team of your choice. Features include Transfer Market; full League tables; injuries; save game facility; promotion and relegation; FA Cup matches; managerial rating; 4 divisions; as many seasons and you like; pick your team for each match and seven skill levels.



POGOTRON

You have been stranded on a hostile planet, alone, except for the 'turbo-pogo', the only means of transport. You have the plans for a space ship and the search is on to find the equipment and then build the space ship to escape. The final danger is the Guardian who must be destroyed before you can be free.



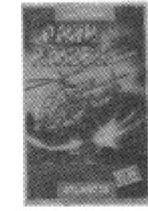
MICRO RHYTHM

Microrhythm converts your computer into a programmable drum system. All of the realistic drum sounds were digitised using the Replay sampling system and eight drum sounds can be arranged in 29 different drum patterns. Annoy the neighbours without buying a drum kit!



STRATOSPHERE

It's five years on, the battle for human life has been successful but only to a point. The remnants of the alien force still menace Earth and it's your task to destroy them once and for all. Some really excellent graphics add spice to this space shoot 'em up.



DAWN RAIDER

Fly your heavily armed helicopter gun-ship into the fortified complex of the super criminal that is holding the world to ransom with his nuclear armed rockets. Guide your gun-ship through the great underground cavern, shooting and bombing the defence systems to stop the destruction of the world's cities.



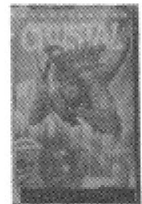
LEAGUE CHALLENGE

Manage your favourite football team your way. No more matches lost because the manager chose the wrong team or played a wrong combination. Now it's your chance to go for Division One or win the league and cup double. You may even find the manager's job is harder than you imagined!



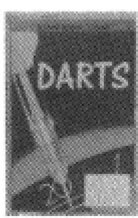
MOLECULE MAN

Lost in a maze with 256 locations you must fight against time and lethal radiation to survive and teleport to safety. Also included is an easy to use, Maze Designer which will allow you to edit the existing game or create a new version. Nice 3-D graphics as you locate and fit 16 circuit boards to escape



CRYSTAL RAIDER

Solve the problems and collect the crystals. Fifty fiendish fatal patterns to be solved! Hours of mind and joystick bending entertainment for those who like their games to infuriate the parts other software cannot reach! Not really an arcade adventure but a series of logic problems to tax you all the way.



DARTS

Step up to the oche and enjoy all of the fun of competition darts that includes three dart games for the price of one. A choice of these popular games; 501, Round the Board and Cricket are available in this package.



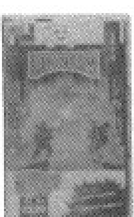
SPACE WARS

Hideous aliens, ground bases bristling with guns, fiendish flying formations and an asteroid belt or three just to keep you on your toes! All you've ever wanted from a shoot 'em up with incredible playability makes this a must for any serious game player. Be warned, it's not for wimps. Be good or be gone!



PENGON

Can you save Penguin Willy from the ferocious mutant sea lions? Stun them by knocking them against the walls or crush them to a horrifying death with sliding ice blocks. High speed arcade action game, full colour graphics and music.



PHANTOM

Something strange has been happening, something quite unnatural. At first no-one took much notice. Those who had experienced it were considered crackpots but now the number of crackpots were too numerous - something strange was indeed going on. Another cracker from Zeppelin Games.



LAS VEGAS CASINO

Save your money yet again by staying at home but this time you can visit many different tables in the Casino. Choose from Black Jack, Craps, Baccarat or Roulette, names that conjure up the atmosphere of the Las Vegas casinos, a world of high stakes. You have $1,000 but the jackpot of $50,000 is waiting!



BMX SIMULATOR

A brilliant version of the epic C64 game. Eye in the sky viewing - amazing realistic simulation, the starting ramp, burms, bumps, water splashes etc. all have realistic effect on the rider. Two player option and seven different courses will test even the best games player.

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Some new ... some old ...

THE ETERNAL DAGGER



A highly recommended follow up to Wizard's Crown, this fully graphics based fantasy role playing game will keep you entranced as you battle through the wilderness in search of the enchanted weapon that alone can save the folk of Middle World. Full of magic, mystery and intrigue this is one of the best adventures on the Atari.

DISK ONLY

OUR PRICE £6.95

BATTALION COMMANDER



An exciting real-time tactical game with you as lieutenant colonel in charge of an entire armoured battalion. Choose from five different scenarios from a training mission against a Soviet tank battalion to tough assignments against the Chinese. You can adjust the relative strengths of your forces and the opposition and choose from 40 different terrain maps and five different scenarios. Enough variety to last for years!

CASSETTE ONLY

OUR PRICE £4.95

SCOOTER

Scooter needs your help to get through the eight levels of his enchanted building. Inventive traps and unusual gimmicks abound. Weird sounds have been heard from the new building and the construction men are spooked. What could it be? It's your job to move Scooter up through the eight levels to find the secret. But don't think it's going to be an easy task!

DISK ONLY
OUR PRICE £3.95

LASER HAWK

Your Laser Hawk helicopter is ready to go, but are you? To destroy the five command centres of the evil Proc Irata, your ship will have to outfly or blast away its incredible defence systems which include air cannons, smart missiles, falling meteorites, heat rays and high level bombers. Eye stunning graphics and unbelievable non-stop action make this game a winner!

DISK ONLY
OUR PRICE £3.95

SEA BANDIT

Challenge the mysterious forces of the deep ocean as you search for glittering lost treasures. There are concealed mines which are launched from the the ocean floor and you must activate your mine sweep before they explode. Quick reflexes are needed if you want to get through all 12 levels of this underwater escapade.

DISK OR CASSETTE
OUR PRICE £3.95

ARKANOID

One of the best adaptations of all time. Take the simple but highly addictive concept of Breakout and add dozens of variations, enhancements and extras and you have one of the best computer games of all. This is highly addictive and challenging and a must for anyone who has not yet experienced the addictive nature of the world of Arkanoid.

CASSETTE ONLY
OUR PRICE £2.95

KNOCKOUT BOXING

Challenge for the Heavyweight Championship of the World by boxing your way past nine progressively more skilful opponents. You will need speed and skill to deliver body weakening stomach punches, points scoring head jabs or deadly upper cuts. Your must remember to keep your guard up or the referee will soon be counting you out.

CASSETTE ONLY
OUR PRICE £3.95

JUNO FIRST

A fast and furious space shoot 'em up translated from Konami's early arcade machine of the same name. Dozens of alien craft will attack from all sides and you must be quick to blast them away and earn your bonuses. If you feel that you are going to die then you can take the last resort and warp away through a kaleidoscope of colour. Similar to invaders, this fast shoot 'em up will appeal to any arcade game fanatic.

DISK ONLY
OUR PRICE £3.95

TRIVIAL PURSUIT

The classic board game translated to the Atari with added question power. Now you can answer questions presented with music and graphics as well as straight text. An ideal family game or one you can play on your own. Over 3,000 questions and all the mechanics of the game taken care of by the computer. Trivia has never been so much fun and has never been available before at this price!

DISK ONLY
NOW ONLY £2.95!

PANZER GRENADIERS

In this exciting solitaire wargame you make the decisions for a regiment of the elite armoured infantry attached to the Panzer Grenadiers. Your forces also include mortar, artillery, Panzer IV, Panther and Tiger units. The Russian enemy is directed by the computer which will fiercely challenge you with its own complement of infantry, tanks and anti-tank guns. Three levels of difficulty, joystick control, hi-res graphics.

DISK ONLY
OUR PRICE £7.95

DECISION IN THE DESERT

Take command at the Battle of El Alamein. You can lead either side in this accurate simulation from the creators of F-15 Strike Eagle

CASSETTE
OUR PRICE £5.95

MIG ALLEY ACE

An aerial combat simulation set in Korea with 3D graphics, cockpit instrumentation, different skill levels and much more

DISK
OUR PRICE £6.95

COLOSSUS CHESS 4

Claims to be the best chess program of all. The writers of Sargon III would disagree, but there is no doub this is a fine chess simulation particularly for advanced players

CASSETTE ONLY
OUR PRICE £3.95

MAKE A COMMITMENT

BUY SOMETHING EXTRA

BLUE MAX

Everyone must have heard of this World War Two 3-D flying game. We no longer have the ROM cartridge but this classic can be yours on disk dirt cheap!

DISK ONLY
OUR PRICE £2.95

SUN STAR

The Sun Star is the fastest and most powerful craft ever built and you must pilot it to recover crystals from the solar grid. A slightly different game.

DISK ONLY
OUR PRICE £2.95

FS2 SCENERY DISKS

WE HAVE A LIMITED NUMBER OF SCENERY DISKS IN STOCK AT £9.95 EACH - PLEASE PHONE

Still Available

GAMES

ZAXXON
One of the all time classics for the Atari, Zaxxon set new standards with its unique 3 dimensional battle-field and great graphics

DISK/CASS **OUR PRICE £2.95**

TAIL OF BETA LYRAE
Our A-Z of Atari Software series says "The ultimate 'Scramble' clone with superb graphics and music." A great horizontal scroller

CASS **OUR PRICE JUST 95p**

FIGHT NIGHT
Fight Night brings you all the thrills of the boxing ring as you face the most brutal fighters ever in five separate battles, 1/2 players.

ROM **OUR PRICE £7.95**

SPEED HAWK
One of Atari's last games for the 8-bit can now be yours at budget price! A smoothly scrolling arcade game in which you must defend the ring worlds of your solar system from pirates.

CASS **OUR PRICE £2.95**

PANZER GRENADIER
A wargame of German armoured infantry on the Eastern Front. Five historical simulations, skill levels, joystick control, graphics

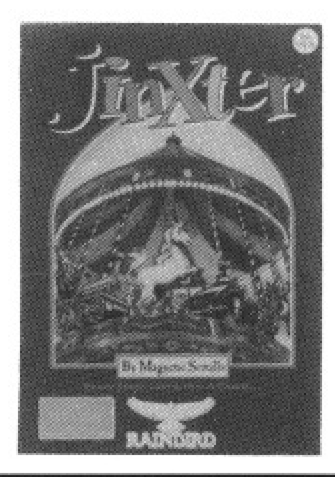
DISK **OUR PRICE £7.95**

NIBBLER
Slinking through an unknown land Nibbler finds himself in an iridescent world of constant change. As time grows short his body grows longer and he risks running into himself. Can he survive?

DISK **OUR PRICE £1.95!!**

JINXTER
An adventure from Magnetic Scrolls, the team that set new standards in adventure design Requires 1050 or XF551 drive

DISK **OUR PRICE £7.95**



JEWELS OF DARKNESS
Three superb, classic, adventures with full colour graphics. Choose from Colossal Adventure, Adventure Quest or Dungeon Adventure as you take on the challenge of the mythical worlds created by Level 9. The Premier collection nicely packaged with a 64 page book

CASS **OUR PRICE £5.95**

LANCELOT
Level 9 recreate the time of wizards and the Knights of the Round Table in a three part adventure spanning the complete saga of the quest for the Holy Grail. Superbly researched and superbly written this text adventure is full of atmosphere and highly recommended.

DISK OR CASSETTE **OUR PRICE £5.95**

ZORK 1
One of the most famous adventures of all time. Classic Infocom in the original box and packaging. A real bargain!

DISK **SUPER PRICE £2.95!**

US FOOTBALL
American Football is now a big craze in this country and you can now play at home. Outsmart the defence, make tackles, select plays and more.

ROM **OUR PRICE £7.95**

EASTERN FRONT (1941)
The classic war simulation by Chris Crawford that astounded Atari users when it was released. Based on Operation Barbarossa on the border of Russia.

ROM **OUR PRICE £6.95**

SUPER BREAKOUT
Breakout was the original simple yet totally addictive game and this enhanced version will provide even more addictive fun. Needs paddles.

ROM **OUR PRICE £3.95**

ONE ON ONE
Play basketball with two of America's top players in this great sports simulation which features realistic offensive and defensive moves

ROM **OUR PRICE £7.95**

CAVERNS OF MARS
Winner of one of the first Atari programming competitions, this was one of the first vertical scrollers and remains much sought after - LAST FEW WITHOUT BOX BUT WITH FULL ORIGINAL MANUAL -

DISK **LOW PRICE £4.95**

MAXWELL'S DEMON
A simple yet challenging puzzle game which will get you totally addicted. In fact two games in one for double the fun

DISK **OUR PRICE £1.99**

MR ROBOT & HIS ROBOT FACTORY
One of the most famous platform games that has you running and jumping over everything in sight. A really classy game

DISK **OUR PRICE £1.95**

STRANGE ODYSSEY
At the galaxy's rim, there are rewards aplenty to be harvested from a long-dead alien civilization. Fabulous graphic adventure

DISK **OUR PRICE £4.95**

APPLICATIONS

LETTER WIZARD
For those who need a little more sophistication in a word processor, Letter Wizard gives you all of the features you would expect

DISK **NOW ONLY £5.95**

INVITATION TO PROGRAMMING 2
Entitled Writing Your Own Programs, comprises TWO cassettes and TWO workbooks and does not require Invitation To Programming 1.

CASS **OUR PRICE £2.95**

MUSIC PAINTER
An exciting educational program that helps to teach music by using colours instead of notes. For children or adults alike

DISK **OUR PRICE £7.95**

BASIC CARTRIDGE
Some programs, especially some early public domain programs won't run on the XL/XE but they will if you plug in the old version of Basic.

ROM **OUR PRICE £3.95**

EDUCATION

JUGGLES RAINBOW
A first computer experience for children aged 3 to 6 that teaches the concepts of above, below, left and right plus letter recognition

DISK **OUR PRICE £5.95**

JUGGLES HOUSE
Another for 3 to 6 year olds teaching the concepts of inside, outside, upper and lower with Juggles' House and Toyshelf.

CASS **OUR PRICE £5.95**

BOOKS

EASY PROGRAMMING FOR YOUR ATARI MICRO
This book went out of print 3 years ago and we have been searching for a replacement ever since. We are absolutely delighted to have found more stocks of one of the best beginner's books ever published.

REDUCED PRICE £4.95

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An excellent book written by adventure expert Tony Bridges covering adventures in general and showing how you can write your own adventures .

OUR PRICE £1.50

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If you are fed up with simple arcade style games but are not sure of the maths required in writing 'thinking' games like chess here is a book that will help you out.

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FOR SALE

XL SYSTEM: 800XL, 1010 with over 30 games and 60 typed-in games, all Atari User mags plus Solo flight, Chess on ROM and books etc. All for £160. Write to Paul Tarsey, 94 Marford Rd, Wheathampstead, Herts AL4 8NQ. Will sell separately

CASSETTE: 1010 complete, £15 including p & p with box. Phone Denis 0273 540661

HARDWARE: XE plus 1050 d/d with duplicator £100; XL plus 1050 £80. Atari 400 £15. Many extras, books, mags, cartridges etc. Phone Richard 081 992 9655 (West London)

CLASSIC: 800XL, two 1050 drives, 850 and 1010 in original boxes. Serious - 6 carts and 8 disks. Entertainment 11 carts, 20 disks and 21 cassettes. 21 books. Sets of mags. Phone 0707 327193

IN GOOD ORDER: 1050 drive unboxed £60; 800XL boxed, manual, power supply, £38; Monitor magazine issues 12 to 21, £10; (Old) Atari User Vol.1 No 10 to Vol.4 No 7, £20; Page 6 issues 20 to 37, £12; 50 cassette games - offers? Plus DIY Speech Synthesizer and much more. All prices include postage. Write P Grainger, 12 Willow Tree Close, Okehampton, Devon EX20 1NL

XE SYSTEM: 128XE, 1050, Touch Tablet, Centronics, Printer. Approx. 400 games, 20 business etc. Many manuals and mags. Very good condition £150 ono. R Granville, 56 Brentwood Ave, Whitleigh, Plymouth PL5 4HB

LYNX: Atari Lynx with Switchblade II, Dirty Larry and California Games everything in working order. Name your price. I want to swap for 1050 or Matrix printer, have 1027 printer to sell for £25. Lynx plus 1027 swap for good Panasonic or Citizen printer. Write to Arnold Bontsema, Euvelgunnerweg 10, 9723 CT, Groningen, Holland

130XE: plus XC12 cassette, joystick, 40 cassette games including Silent Service, F15 Strike Eagle, Spitfire Ace, NAU mags 37-57 plus Monitor mags 18-21. £135 the lot. Yorky expansion box (256k) to fit 800XL with 64k, £80 new, unused £50. Tel.: Steve 0622 757338

VARIOUS: Two 800XL's, 65XE games system, 400, Track ball, Graphics Tablet, 1010/XC12 cassettes, 1050 with happy & w/p software plus games etc. on disk and cassette. Phone 0375 840807 (Essex)

XL SYSTEM: 800XL (Rev. C) with service manual, 1050 drive with right protect switch, joystick, all boxed and in excellent condition - complete with all cables, manuals and covers. Mini office II, Visicalc and a few other PD disks, books and every copy of Atari User and NAU. All this for £100. To include a Juki 6100 daisy wheel printer with 2 wheels and spare ribbons, manual, cover and lead, £170. Tel. 0709 544337 (Rotherham)

COMPLETE SYSTEM: Two 800 XL's, 1050 drive, 1010 cassette, 1029 printer plus all connections, manuals and lots of software - serious and games on tape and disk, £200 ono. Phone Ray 0304 204920

MAGAZINES: Analog issues 6-16; Page 6 10-19 & 21-35; all in binders - reasonable offers welcome. Tel.: Gary 0758 613524

XE SYSTEM: 130XE, two 1050 drives, one with Happy, parallel printer interface and cable, 1010 recorder, 1020 plotter, Atari Artist and Touch Tablet plus disk and ROM software. £130 ono. 800XL. 1050 drive, software, joystick. £80. Please phone Peter 0203 392266

65XE: computer in great working condition with more than 25 games on cassette plus XC12 recorder, £50. Also software on disk and ROM. 1020 Printer plotter (works but is missing a small plastic cog inside so the paper doesn't feed). Spare pens included. £7 if collected (Brighton) or £10 to include postage. Tel.: 0273 883630

WANTED

8-BIT SYSTEM: XL or XE (Rev. C only please) in good working order, complete with leads etc. will pay £25. Also 1050 drive wanted, working and complete, will exchange for 65XE (keyboard needs attention) with leads and software. Write to Denham Phipps, 511 Harrogate rd, Eccleshill, Bradford BD10 0EP

ROM CARTRIDGES: Fraction Fever, Invaders, Atariwriter, R-Time, Who Dares Wins also Atari Touch Tablet with Atari Artist, Super Archiver, Light gun, ICD Printer connection. Write with details to D Heard-White, 34 Mayfield Cres., Brighton BN1 8HP

ULTIMA: III and IV wanted, good money paid. Jason Kendall, 22 Beck Way,Thurlby, Bourne, Lincs PE10 0LE . Tel.: 1778 426409

PRINTER: 1029 printer wanted must be in very good condition, will pay reasonable price. G McIntyre, 25 Colchester Terr., High Barnes, Sunderland SR4 7RY. Tel.: 091 514 3378

DUFF DRIVE: Faulty 1050 wanted for spares - must be cheap. Also DOS XL cartridge by OSS. Write to Tony, 109 Searby Road, Lincoln LN2 4DT

UTILITIES: Syntrend, Syngraph and Atari Statistics 2 onwards. Write to B Thomas, 71 Woodford Ave, Ramsgate, Kent CT12 6RE

TECHNICAL NOTES: Service Manual and/or Circuit Diagram for XES 4001 games console/ keyboard - user guide for Tandata TM512 Modem - broken or non working 1050s for spares with or without psu/leads etc. Phone S Berry, 0233 645494 or write to 17 Old Pond Rd, Ashford, Kent TN23 2QX

PEN PALS/HELP

USER GROUP: Does anyone know of a group in the London area? There must be one in or around the Capital. Also does anyone know where I can get a RS232 from - for a modem. Write D Wills, 16 Selkirk Court, Whiteley Road, Tottenham, London N17 6RF

HELP: Does anyone know how to mix different fonts in one document and design your own fonts to use with 10-Print on cassette? Also does anyone has any unwanted mags i.e. Antic, Analog, Atari User, Explorer, Monitor, Compute etc. If you can help write to D Phipps, 511 Harrogate Rd, Eccleshill, Bradford BD10 0EP

PROGRAMMERS CLUB: The Atari Classic Programmers Club! All the help you need to produce commercial software. We are also here to help those struggling to get to grips with the Atari 8-bit - We do what Atari should have done. Send an s.a.e for info to: ACPC, Pen-Tyddyn, Capel Coch, Llangefni, Anglesey, Gwynedd LL77 7UR

CONTACT is FREE of charge and may be used by any genuine Atari enthusiast for contacting other owners. Any notice may be included except those offering software only for sale or exchange or those offering items for sale commercially. The Editor reserves the right to omit or edit any notice received at his discresion. If space is tight, notices may be shortened and addresses may be omitted with only telephone numbers being published.
Send your CONTACT notice to CONTACT, PAGE 6, P.O. Box 54, Stafford, ST16 1DR. Please write your notice on a separate sheet of paper, not as part of a letter.

FOR SALE ... WANTED ... PEN PALS ... ADVICE ... HELP ...

FROM ST TO XL/XE AND BACK AGAIN

Peter Hall has a set up that works

Thanks to your continued support for the Atari Classic, I have been motivated into writing my first article to hopefully contribute towards your magazine and help other Atari users planning to transfer files to and from ST and XL/XE using an Atari 850 Interface.

After reading the letter from Mr Den Baverstock in issue 61, I studied the cable connections he listed and they did not look correct to me. As I have successfully been transferring files for the past two years or so, I managed to find the notes that I made when I was making up my cable and found that my suspicions were correct. The cable Mr Den Baverstock had made up was connected up a different way to my own.

I then checked my P.D. collection to see if I had the same terminal software as he mentioned so that I could test my cable using the same software, I found Uniterm on ST USER cover disk for June 1991. After making a working copy I set to work and, after a little playing around to get to grips with Uniterm so that I could set it up correctly, the big moment came with fingers crossed I clicked the mouse on the ST and then pressed return on my 800XL, a few seconds later the test file was written to my ST floppy disk in drive B. I then set up the two machines to send the file back to the 800XL and the file promptly returned from whence it came.

I have also tested the cable with other software since to make sure the cable was compatible with other P.D. software.

My ST is a 1040STF so I have included a diagram of the pin outs of the modem port (RS 232) and a diagram of the 850 interface RS232 port #1 in case the STE is different to my STF. As far as I can tell from the menu on 850 EXPRESS software it does not have autoprint as in UNITERM. Also my comms cable is approx. 2 metres in length (this may be relevant for Mr Den Baverstock).

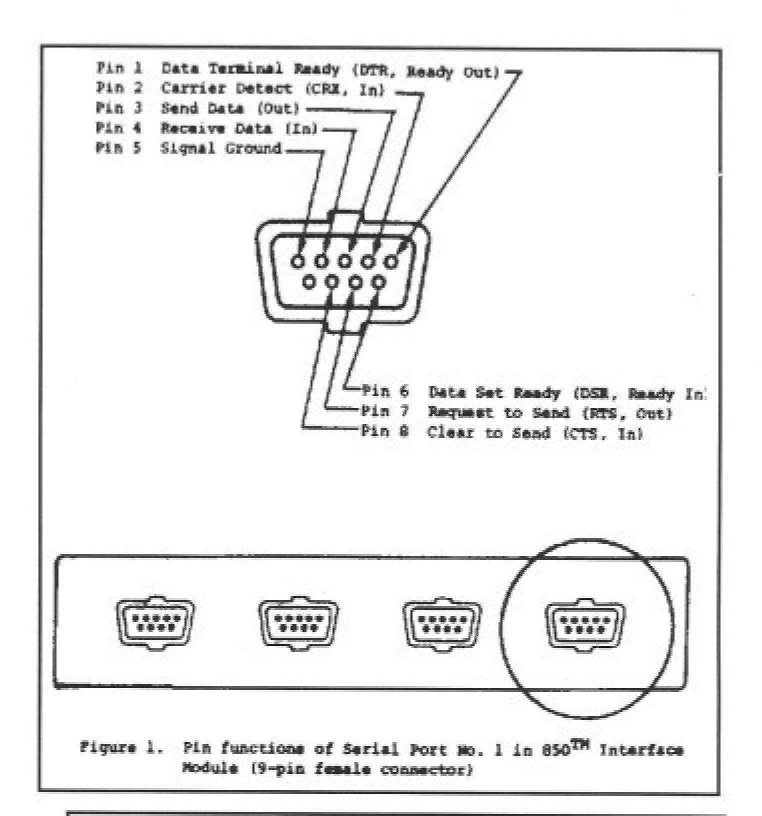


Figure 1. Pin functions of Serial Port No. 1 in 850™ Interface Module (9-pin female connector)

Modem

1 — Protective Ground
2 — Transmitted Data
3 — Received Data
4 — Request to Send
5 — Clear to Send
6 — Not Connected
7 — Signal Ground
8 — Data Carrier Detect
9-19 — Not Connected
20 — Data Terminal Ready
21 — Not Connected
22 — Ring Indicator
23-25 — Not Connected

THE SETUP TESTED

ST software:
ST TALK (the one I use), UNITERM, VANTERM

800XL - 850 Interface:
850 EXPRESS terminal software (Public Domain).

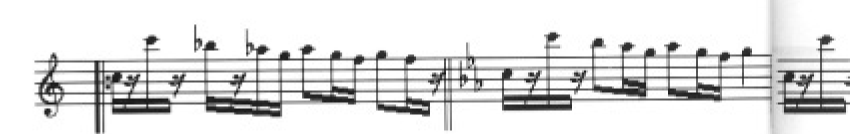
I set both machines to used the following settings:

2400 BAUD
XMODEM TRANSMISSION
8 DATA BITS
PARITY NONE
1 STOP BIT

CABLE CONNECTIONS

ST		850
PIN 2	-------------	PIN 4
PIN 3	-------------	PIN 3
PIN 4	-------------	PIN 8
PIN 5	-------------	PIN 7
PIN 6	-------------	NOT CONNECTED
PIN 7	-------------	PIN 5
PIN 8	-------------	PIN 1
PIN 20	-------------	PIN 2





SOMETHING FOR NOTHING

John S Davison's guide to ST music

A few issues back we looked at Yamaha's TG100 General MIDI compatible sound expander module. One shortcoming I noted at the time was the limited amount of voice editing you could do from its front panel. What it really needed was a dedicated editor program running on the ST to enable you to get at all the voice generation parameters hidden deep within the unit. Well, the good news is that Yamaha have released such a program, known as TONY. Even better news is that it's FREE! Yes, all you do is pop into your local Yamaha main dealer and ask for a copy, or call Yamaha themselves on 0908-366700 for more details.

It's a public domain program written by Y-NOT Application Design of Germany (spotted the name connection yet?), with Yamaha as its main distributor. There's a documentation file on the disk which explains its features, and also tells you how to obtain a detailed user's manual from the authors for a "small fee" (amount not stated). It appears to need an ST with 1MB memory and a high resolution monochrome monitor to run, although it didn't mention this in the documentation. Naturally, for it to be any use at all you also need a Yamaha TG100 attached to your ST via MIDI.

Tony's main role in life is to provide comprehensive voice patch editing facilities, but it also acts as a voice librarian enabling you to easily store and manage your collection of TG100 voices. Voice editing can involve the manipulation of a large number of parameters, so editing software needs to be carefully designed to make it easy to use. Tony scores highly here, as its numerous functions have been given their own screens or windows and virtually everything is mouse driven. It also uses menus, toolbars, buttons, sliders, dialogue boxes, and all the other widgetry of a good graphical user interface.



The main editing screen

The screens are all fairly intuitive to use, but there's an online help facility available should you get stuck.

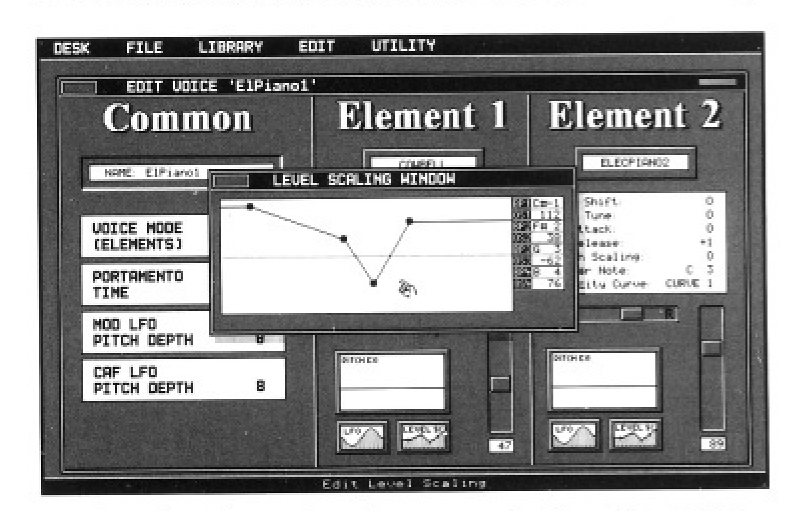
THE LIBRARIAN

After loading the program you're taken straight to the librarian screen, so let's look at this function first. It displays the contents of up to four 64 patch voice banks, plus a scrollable window showing the voices contained in a selected voice patch library file loaded from disk. The library has infinite capacity (depending on disk space available, of course) so you can store as many patches as you wish. You can load up to 9000 voices into memory at once, but presumably only if your ST has maximum memory fitted.

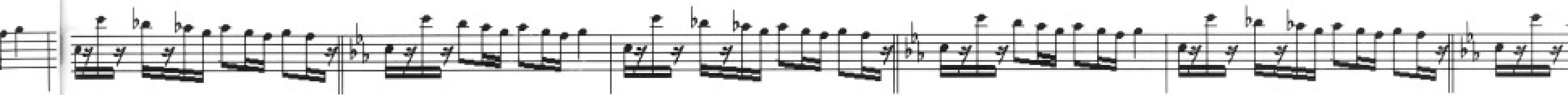
Voice banks can be loaded from disk (there's even one supplied containing a set of new voices) or from the TG100, and the voices edited using Tony's Voice Editor. They may then be put into the library and stored back on disk, or copied to any position in a bank for downloading back to the TG100 for immediate use.

You can also categorise any voice in the library by assigning one of Tony's nine predefined attributes to it, and later search for voices having a particular attribute. Pity you can't define your own categories though. You can also search the library by voice name or string of characters; for voices containing a particular waveform; and by number of voice elements in the patch. In other words it's easy to find the voice you want even if you can't remember its name.

Other functions allow you to rename voices; sort the library



Level scaling using the mouse to drag the graph



by voice name; automatically remove duplicate copies of the same voice; print a listing of the library contents; and save and load library files to/from disk.

You can also easily audition any voice. Just select it then call up the onscreen piano keyboard and "play" it (at different MIDI velocities and with modulation or pitch bend applied if required) by clicking on the keys with the mouse pointer. This is great for quickly identifying the right sounding voice from amongst the hundreds stored in your library.

THE VOICE EDITOR

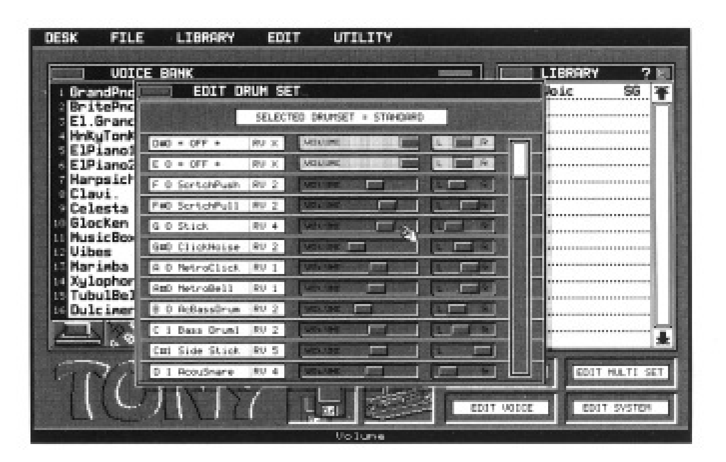
Voice patch editing from the TG100's front panel is very fiddly, as the unit is physically very small. Scope is rather limited too, so a software editor is really the only answer if you're into serious patch creation. Once again Tony delivers the goods, allowing easy editing from your ST. Having selected a voice on the librarian screen you can then switch into voice edit and modify any of its parameters displayed there. Selecting a voice also causes it to be downloaded to the TG100's edit buffer, and when you alter a parameter onscreen the change is made directly to the voice in the TG100. This means you can hear the effect straight away without having to perform a separate download operation.

A TG100 voice can be built from one or two "elements", each based on a chosen waveform type. This allows you to create basic sounds using just one waveform as its source, or more complex voices using a mix of two different waveforms. The edit screen has a display window for each element plus one for parameters common to both, allowing access to all the variables needed to change a sound to your liking.

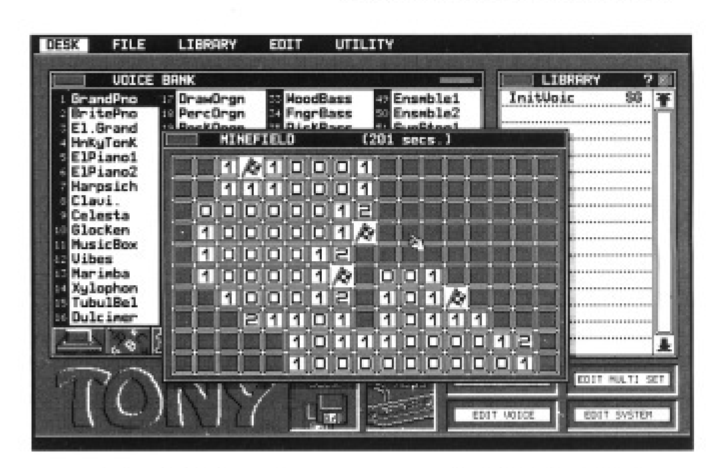
In addition there are other parameters that can be edited graphically. For instance, element volume is controlled by a graphical slider, which you drag up or down with the mouse. Similarly, you can set the left/right stereo pan position of each element using a horizontal slider. Various "envelopes" used to shape different aspects of the sounds, e.g. the pitch envelope, can also be edited graphically. Each envelope is defined as a string of numbers, but may be more easily visualised as a graph, so Tony actually displays them in line graph form. To alter them you just drag the graph line into the shape you want, and this automatically changes the sets of numbers accordingly - much easier and quicker than keying stuff in.



Voice editor screen showing a two element voice



Drum kit editor window



Minefield - a bonus game for light relief

THE MULTI EDITOR

The TG100 can store complete multi-timbral setups. These are definitions of how the TG100 will be configured to perform a particular piece of music. It's possible you'll want a different multi setup for each MIDI song you play, but creating them is a bit of a chore - unless you have Tony, of course.

The main Multi Edit screen is really an overview of the complete 16 channel setup. It shows which voice is assigned to each channel; the volume of that voice; its left/right stereo pan position; and its key range displayed on a miniature keyboard. Then for each voice part you can set a variety of additional parameters, including such things as velocity sensitivity, pitch bend range, level of reverb, and so on. You can also set the reverb type to be used for all voices, and overall reverb time and level.

Tony also has a few other screens for specialised functions. These include a Drumkit Editor for setting the volume, pan position, and reverb effect of each drum sound; a System Edit screen, which allows you to set the TG100's overall system parameters such as tuning, transposition, volume, etc. There's also a Global Preferences screen, which controls the way Tony's internal functions work. For instance you can specify how the mouse buttons work, set key click and menu blink, and turn MIDI Thru on and off. And should you get tired of all this editing activity there's even a built-in game to provide a little light relief! It's called Minefield, a logic game requiring you to locate all the mines randomly hidden under the squares of a grid without accidentally exploding one.

Tony crashed a few times during use, but I'm willing to forgive this under the circumstances. In fact, I just can't believe something as good as Tony is available for free. Yamaha should be applauded for supporting their hi-tech music kit (and the ST!) by releasing free utility software - other manufacturers please take note! There's more where this came from too, as Yamaha also have free ST versions of their SQYRREL and STEFFI editing software for use with QY10 portable synth and FX900 effects units respectively. If you use any of this kit I suggest you contact Yamaha or one of their dealers right away for further details. After all, it's not every day you can get something for nothing!

CRAZY DAZE!

QUALITY COMMERCIAL GAMES FOR £2.99!

Daze Marketing have just released for Christmas six of, arguably, the best games to come onto the ST market in the last year or two. The most amazing thing is that they are only £2.99 each direct from Daze themselves so you know that you are getting quality and excellent value for money. You've got to hurry because this offer won't last for ever and you'll kick yourself if you don't get these games at these giveaway prices.

You'll find a summary of the games at the end but here's a blow by blow account of what you'll get for less than three quid. Remember, all of these games have been previously been available at top whack prices of around £25 - £30 so there's another reason for buying them.

Enough of my drivel what are they like? No sooner said than done!

STORM MASTER

You are the new Grand Magister of the island kingdom of Eolia hunting assassins from the nearby island of Sharkaania, against whom you are fighting a war for reasons long forgotten, who have murdered the old one as their job description entails. With this new responsibility you must defend the kingdom from the Sharkaanians and, using all the resources at your disposal, defeat the seven opposing cities and win the war for your country. Your country and the opposition have both learnt to harness the power of the strong winds that blow across your countries to build and use flying ships and bring tornados on your enemies.

Through the Council of Seven, who control the main resources of your country, you control the game by looking after production control, religion, trading, leisure and entertainment, intelligence, science and the command of your armies. Each of these areas needs to be managed wisely because they all affect each other in some way. For instance if you don't trade you can't get supplies to build ships and if you don't have ships you can't raid the opposing cities.

It takes a true politician and inspirational leader to get the right mix and win the game which is intricate but yet immensely playable as you experiment with a new ship which then explodes on take off, back to the drawing board! The graphics are superb and make staying with the game very bearable as some of the games of this type get boring after a while. Nice arcade scenes of battling flying ships perks the gameplay up and the sound, as always with a Silmarils game, is nice with samples used to good effect.

This isn't a game you can play in a hour or two. A day or two perhaps, but if you like strategy get the money in now, and if you are new to this type of game you should try it at this price, you might well like it.

BOSTON BOMB CLUB

If you liked Lemmings and all the other types of puzzle games that are currently available then you are going to love this. Basically you play one of the scientists in the Bomb Club who have invented a game where they roll bombs across a table full of hazards and your job is to make sure that the bombs are extinguished by the bucket of water at the end and that they don't fall foul of the dangers of the table. You can rotate pieces of the table and block areas off, you can also use springs to catapult the bombs right across the table. All the time the other scientists are looking on and sometimes they change certain pieces just to make your life hard. Oh, and by the way you mustn't let two bombs touch as they then both explode.

The graphics are good and so is the 1920's style music. The game play is rewarding and the difficulty level is pitched about right. This is a game for those of you who like to do nothing better than spend a couple of hours pitting your wits against the computer. A definite inclusion in any puzzlers box.

METAL MUTANT

You think that it's hard to play a game with one type of hero/ship, then how about three? All with their own moves and weapons that are effective against different types of the 40 aliens that you are up against! This should keep you on your toes a bit! There are 130 different screens to wander through and many different weapons that can be picked up and used against the aliens, all of which must be destroyed on each level. The inclusion of puzzle elements of the game mean that this will keep you coming back, not time after time but continually over several months as changing from one form to another is a skill to be mastered. The graphics are very good, drawn by an artist from Marvel comics who drew the X-Men to name just one. The sound comprises mainly of sound effects, but nevertheless very well done. The lastability of this game is perhaps limited in that you don't have passwords or level selects, only difficulty selection. It should last you as long as £2.99 gives really. Definitely one for the arcade shooty I think.

STARBLADE

Storm Walker has a price on his head, set by Queen Genolyn who believes that if she crushes Walker she'll crush the rebellion against her. You play Storm Walker in this adventure set in 3001. You must use your abilities to trade, fight and resolve mind bending puzzles in a vast game. The game is fast paced

and doesn't leave you hanging around for something to happen. It isn't an easy game to play as you must think about your actions and how to solve the puzzles set against you. This is a game that is going to take several days to complete but you can save your progress to disk which makes it all the more bearable.

Graphics are not up to the standards of the other games in this offer but they are not diabolical just average. The sound also is very sparse with spot effects and 'sushing' noise for doors and such like.

This isn't one of the best games in this offer but you will find that it will keep you happy for a good few days as you battle to stay alive. Again this is the sort of game that the puzzle orientated person who bought Boston Bomb Club would like but with some action as well.

CRYSTALS OF ARBOREA

You've heard of Ishar and Ishar 2, this is the game that started it all off. You must gather together a band of happy warriors to search for the Crystals of Harmony that, when united, will banish Morgoth, Lord of Chaos and all round rotter, who has sunk all the other lands of the earth. Yours is next, will you be able to stop him in time?

You start off knowing very little about what you must do to complete your task but you can talk to people and read notices and so learn of quests and deeds to do. This game set the standard for what was to come as it has 16,000 locations, sampled sound throughout on 1 Meg machines and the ability to save to disk.

The graphics are superb and for a game as complicated as this you usually find the graphics lacking but these are stunning. You control the game from a bar at the bottom of the screen by buttons for directions and selecting characters. The use of this is intuitive and needs little explaining. This is a game that when it was on sale for nearly £30 it got over 90% rating in most mags and now that it's only £2.99 it must be worth 99 - 100% just by the fvirtue of the price. Some PD is more expensive than this and it's only half as good!!

Check your pocket, do you have £3? Good, pick up the phone and get this game now, it's brilliant. What more can I say?

SUPERSKI 2

Here is a game that is not just one but six games in one. As with such games you must compete for gold medals and glory in six Winter Olympic sports. This is the only one of the games on offer that doesn't come from Silmarils, but this doesn't mean that it's no good - far from it.

The game has you in the Giant and Special Slalom, Downhill, Bobsleigh, Moguls and Ski Jumping. You can practice each event separately which is most advisable as some of the controls, especially for the ski jump, are difficult but not impossible to master. They all take different skills and temperaments.

The graphics are good and the look on the guy's face when you fly off the top of the bobsleigh run is very funny. Sound is the normal soundchip music, I'm afraid, but still very good. Lastability is high because of the time needed to truly master the controls and playability is there in bucket loads. If it wasn't for the long loading times it would be even better but they're not too bad when you get used to them.

There's something here for everyone, and at 50p per game its very good value for money. You won't be disappointed.



CHRISTMAS PRESSIES!

Remember you can only get these games direct from DAZE Marketing until New Years Eve 1993 - then they're off down the pub apparently.

Send your cheque or postal order (not sure about credit cards so give them a ring) to:

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- STARBLADE
- METAL MUTANT
- BOSTON BOMB CLUB
- STORM MASTER

From Microids
- SUPERSKI 2

And there may well be one or two more by Christmas - check with Daze

Reviewed by Nic Bavington

ST PUBLIC DOMAIN ROUNDUP



Education doesn't always have to mean learning your tables or reading a chapter from a tatty old school book! As you'll see, it CAN be fun...

CAN YOU SAVE THE WORLD?

ROBOT ATTACK is an interesting program which will help improve the multiplication skills of young children. After a colourful title screen and some bouncy music, you are asked to select a difficulty level from 1 (practice) to 6 (genius).

Robot Attack is basically a colourful version of Hangman with multiplication sums replacing the hunt for letters. The main play screen consists of four platforms each with a box at the end. Robots appear on the screen and try to reach these boxes before you can successfully answer the sum presented at the bottom. You must use the keyboard to enter the correct answer.

If your answer is correct, the number of sums remaining (shown at the bottom left of the screen) will drop by one. On level 1 you must solve five sums. This increase to sixty on level 6. The current level is also shown at the bottom of the screen along with your score (you get 25 points for a correct answer).

If your answer is wrong or you don't answer before a robot reaches a box, the foot of a giant alien robot will appear to the right of the main play area. Further wrong answers will mean the appearance of more pieces! There are ten in all - 2 feet, 2 legs, 2 body parts, a neck, two arms and a head (which looks like it's been stolen from a Cyberman). Needless to say, if the head appears, you have lost the game!

If you successfully answer all the sums set before the robot's head appears you are shown the front page of The Times (from the year 2010!) with the headline, "The World Is Saved". There is also a little cartoon showing yourself destroying the enemy robots!

However, should you fail in your mission and allow the alien robot to reach completion, the headline in The Times will read "Robots Run Wild" and the cartoon shows a giant robot destroying some houses!

Robot Attack is good fun and will help with basic multiplication. All of the problems are from the 1-13 times tables. The overall gameplay and ease of use will appeal to younger children who are just beginning to learn multiplication.

NO MORE MESSY WALLS!

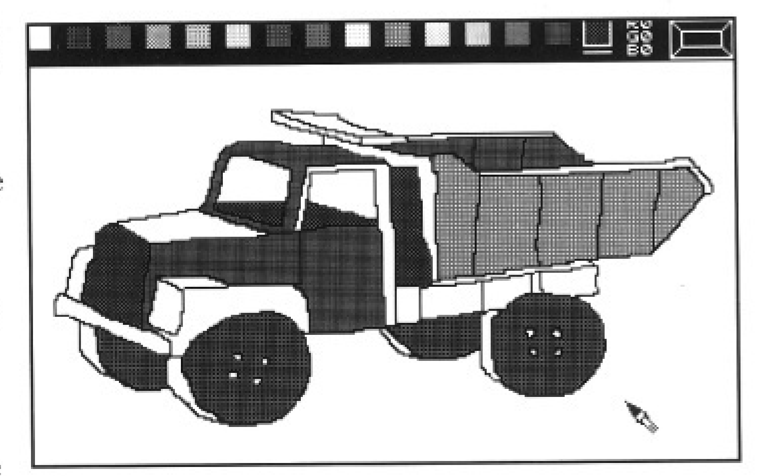
Released by the now defunct American magazine 'Antic', **ST COLORING BOOK** is an excellent PD program which simulates that old friend of children... the colouring book!

With ST Coloring Book, there will be no more ink on the carpet and walls. All of the painting is done on-screen! There are five pictures on the disk: a lorry, house, clown, football and teddy-bear.

Press Help to see the Help Menu. Hit the Spacebar to move onto the Main Menu. Here you can choose from eleven different options: Paint Picture, Draw, Line, Page Back, Page Forward, Undo, Load, Save, Erase, Clear and Quit.

Most of these options are self-explanatory. The one you'll use most of all is Paint Picture. Click on it to begin colouring (the lorry picture autoloads with the program). A paintbrush icon is used to identify the area you wish to paint. Select a colour from a choice of fifteen at the top of the screen and click on the area you wish to paint. Hey presto - it quickly turns to that colour and best of all, there's no need to worry about crossing the lines! Very soon you'll have a colourful picture.

If you want a quiet afternoon without having to worry about coloured ink and paint appearing all over the house, I suggest you take a look at ST Coloring Book. It is an impressive piece of software from the magazine which brought us the Cyber art series.



Hey, this colouring is fun!

ME, ME, ME!

ME FIRST is a quality educational program involving identification and puzzle solving. A set of four pictures must be placed in the correct sequence by clicking on them with the mouse pointer.

There is a selection of 24 picture sets on the disk (2 x 12). Each set is accessible from the main play area by clicking on the relevant icon. A tune will play and the four pictures from that set will appear. However, they have been mixed-up and require sorting!

The sets include an apple being eaten, a child dressing for school, a picture being painted and a fisherman catching a fish. The second set of twelve are a bit tougher to work out and also includes some basic arithmetic.

You must use the mouse pointer to place the four pictures in what you consider to be their correct sequence. As soon as you click on a picture, it moves smoothly down to the bottom left of the screen. The others move alongside it as they are picked.

If you get the sequence right, a tune will play and the complete sequence will be shown as a cartoon at the centre of the screen. This cartoon can be played in

either normal or double size (by clicking on the right mouse button to begin play). The kids will enjoy the double size!

If any of the pictures are in the wrong place, you must try again. However, this time the computer gives you the first picture to get you started. If you are still mixed-up, the computer gives you the second picture. This continues until you get it right.

Me First is a great program with some excellent graphics. Some of the 24 sequences are quite complicated and you can add more by registering the disk with the author (only $5). With the wide range of difficulty, Me First will be of benefit to all age groups!

As an added bonus, you also get a demo version of ***KIDPUBLISHER PROFESSIONAL V6.0*** on the disk! Although the Save and Print options are disabled, you will be able to get a hands-on look at this impressive DTP package aimed at young writers. Features include a title-page option, a simple word processor, a drawing program and a set of four fonts. By registering the disk ($25), your child will be able to gain access to the complete version and print out professional-looking homework.

BEAT THAT SPELLING TEST

Even if your school days are a distant memory, you will no doubt still remember that horrible thing known as the spelling test! Well, **LET'S SPELL (FIRST 500 WORDS)** is here to help the kids of today improve their spelling skills and pass any spelling test their teacher might spring on them!

This Shareware version of Let's Spell gives you access to 100 of the 500 words available with the registered version (£10). A title screen leads to a selection menu offering 25 picture icons all in glorious colour. Unfortunately, only the four icons in the second column are available in this version. These are the Greengrocers Shop, Bathroom, Playroom and Farm. Approximately 100 words are available over these four scenes - more than enough to keep the kids busy!

After picking a scene, let's say the bathroom, you move on to a beautifully drawn picture with lots of objects scattered all over the place. A bell will sound whenever you move the mouse pointer over an object that you can spell. In the bathroom scene these objects include a bath, toothpaste, toilet paper, etc.

Click on an object (e.g. the bath) to enter the Spelling Screen; the place where all the work is done! Here you will see a lower-case character set, a "finish" box, an "oops" box, two blackboards, the British and French flags, a thermometer and a friendly dragon. You'll also see a large picture of a bath at the centre of the screen.

To spell the object, you must use the mouse pointer to click on the lower-case letters at the bottom of the screen. As you click on a letter, you'll hear it in clear, digitized form, i.e. if you click on the "b" you'll hear "buh". A professional touch! If you make a mistake whilst entering the letters just click on the "oops" box to delete a letter. Click on the "finish" box when you're finished.

If you manage to spell the word correctly you will hear "Well done" and a tune will play. Also, the dragon will smile! However, if you get it wrong, he will be very cross, show you the word and make you try again.

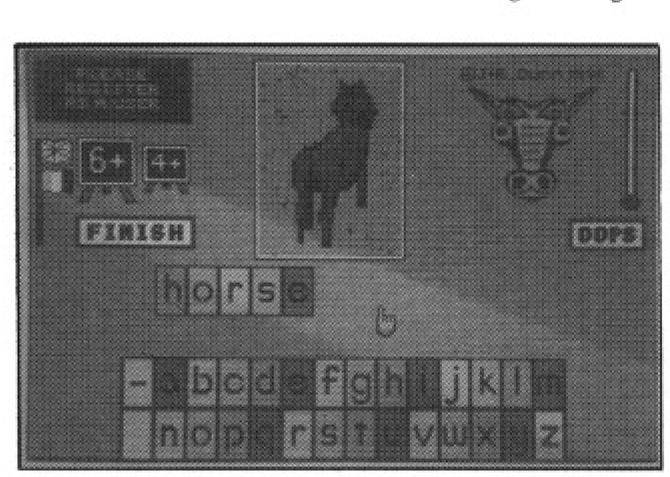
By clicking on the British and French flags you can change the Spelling Screen to French. It makes a good French dictionary!

The blackboards are used to set the level of play. The small one is for ages 4-6 and the other is for 6+. You can also use the thermometer to alter the difficulty. By clicking on it you will be shown if you are hot (i.e. close) to the correct letter. Another difficulty setting can be selected by clicking on the eyes of the dragon. This is called "Look, Cover, Spell and Check". In other words, you see the word for a period of time, it is then covered up and you must spell it. Finally, the word is checked for accuracy. The authors of Let's Spell claim that this is "a well validated learning method and is adopted in many schools."

There are many more features in Let's Spell! I liked the ability to display or print a table of results. Great for presentations after a work session (and don't forget to add a gold star and happy face alongside your ticks!).

This program will undoubtedly help children to improve their spelling skills.

LET'S SPELL is one of the very best education programs for the ST and well worth registering



It is also interesting enough to hold their interest for a reasonable length of time with colourful graphics, bouncy music, happy-faced dragons, digitized speech, etc.! True interactive learning.

By registering the disk with the authors you will gain access to another 400 words, keyboard input, an editor, etc. The registered version of Let's Spell (First 500 Words) is priced at £10 - excellent value for money considering it could quite easily sell for over £25 in the High Street! Check out the Shareware version and I'm sure you'll agree! You'll also get 100 words to keep the kids quiet for a while (before they start scratching the TV screen with a plastic Tyrannosaurus Rex!).

Education can indeed be fun!

ROUNDUP RATINGS

Let's Spell	89%
Me First	86%
ST Color Book	84%
Robot Attack	75%

The disks featured in this review are all available from the Page 6 ST Library. Check the latest ST catalogue and updates or phone 0785 213928 for further information. Disks featured this issues are ST775 - LET'S SPELL, ST323 - ME FIRST and ST290 - COLOUR BOOK

ROUNDUP conducted by Stuart Murray

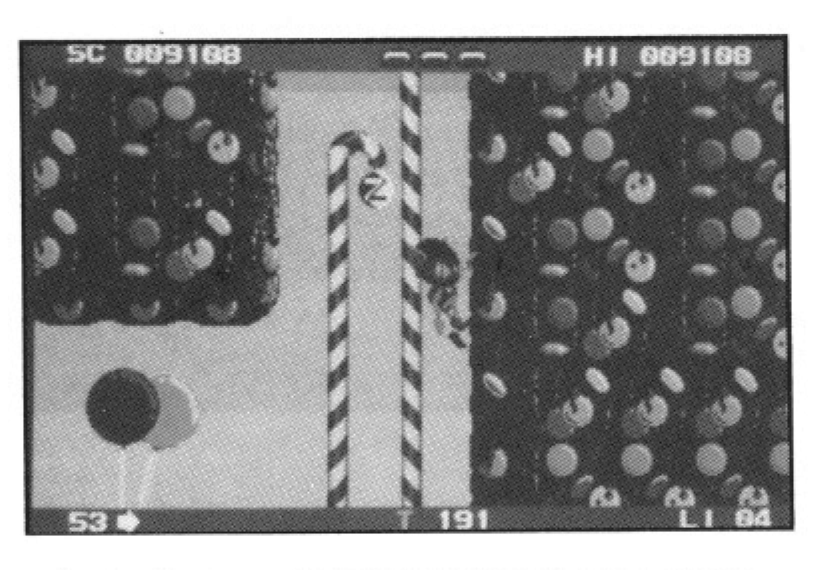
ZOOL NINJA OF THE Nth DIMENSION

Can you imagine it? On his way home Zool saw a large blobby thing and went to investigate. Next thing he knew was that he was stuck on a world made of sweets to complete a challenge to become the "Intergalactic Ninja"

Well that's the hype and story over and done with but is the game that very nearly didn't make it to the ST any good? Well, I can honestly say its stunning! Gremlin said it wouldn't be possible and others said it wouldn't be fast enough or playable, how wrong could they be.

You play Zool, obviously, the Ninja Ant from the Nth dimension (somewhere near Tunbridge Wells) and you must simply get from the start of the level to the end. Sounds easy? Not a bit of it as you have got killer jellies, bumble bees, violins, walking drums, pomegranate volcanoes, saws, drills, chain saws, tanks, balls, toffee apples and hammers to contend with across six themed worlds. First Sweet World then Music, Fruit, Tool, Toy and finally Fairground World. If the baddies weren't bad enough then the end of level guardians are, they range from a banana and alarm clock to a giant driller killer (!)

Once you pass the screen sized 'subliminal' advertising for a certain make of kids lollipop you'll get round to the important bit. Starting the game isn't easy as there's a copy protection that will beat any would be pirate in that its the best I've seen, apart from the legendary Lenslock which was a pain the rear end, but better than any since. Its the normal 'type in a letter from a novella' but with a twist. Once you've got past this you enter the game proper and the option screen stands between you and the way home. The level difficulty can be changed from hard to easy, the music is also alterable from just sound effects to funk, rock, rave, or 'green' whatever that means! Inertia can be set to stop Zool dead or let him slide cooly to a halt. You can set the number of continues that you have, 5 for the beginners, 0 for experienced Ninja's, and finally you can set the speed to two different settings, normal or fast. It's absolutely manic on the fast level!



Helpful weapons have been scattered around the levels to aid Zool in his quest. The obligatory smart bomb will, when collected, destroy all of the nasties on the screen, most useful when things get hectic. "Twozool" gives you a shadow (does that make him a Shadow Ninja?) which follows close behind you and fires just like you so giving you double the fire power but remember it won't last. Jumping is made a lot easier by getting the jumping Zool, funnily enough, but it doesn't last. Shields will give you invincibility for a while and usually pack up just before you need them. You can top up on time with a time bonus, spookily enough, and a 1UP will give you another life. If you are lucky enough you'll get a nice fluttery heart that will recharge your battery for another fight when you jump on a nasty.

You can restart at different points in each of the levels by punching different objects on each level, a sign, a half buried banana, a half buried remote control, and again a sign on each of the last two levels. Each of these, when activated, will save you starting the level from the beginning again.

There are four hidden levels that have to be found. If you watched GamesMaster many moons ago you would have seen that when Zool was in development they included a hidden GamesMaster cavern where you can collect the words of the title. I haven't found this yet but I intend to play many more hours until I find them.

The graphics in Zool are very, very good indeed with enhanced colours being used on an STE, but the STFM version is still very, very playable. The lack of colours doesn't detract from the game in the slightest. The backgrounds are superbly drawn with plenty of detail and "cutesyness", and the variety of the six worlds means that you are not left with the same old rock graphics all the time. The characters are, again, superb. Zool for instance must have over 150 frames of animation in total, just for him alone there are 12 or more possible poses for the Ninja ant to be in. The baddies are no exception either, each of those has its own unique way of moving and plenty of smooth animation all round.

Playability is where Zool excels. It's totally addictive. Forget Sonic or Mario, get Zool and be content that you have the most addictive thing since the last most addictive thing (a little Pythonesque but what was I supposed to say, cocaine?) The slides, totterings, balances and acrobatics of Zool and correct balancing of difficulty and pick-up-ability make this a winner.

Don't expect this one to be put to the back of the cupboard for a long while yet, it's far too good. You'll be there into the early hours trying to beat that end of level Guardian on the Fairground World so don't expect to get any sleep with this one. One thing that was disappointing is the fact that there is no password facility that allows you to go back to where you last started from, you have to start from the beginning all the time. Another thing is that the game isn't installable on a hard drive which, considering the almost perfect protection, is unfortunate but if you have a second drive like me it will pick up that you have it and use it.

If there is one game you should get now before the pre-Christmas glut, it has to be Zool. It'll still be high in the charts before, during and after Christmas, so get your copy today before it's too late!

Now if you'll excuse me I've a Ninja ant waiting to beat the living daylights out of a licorice allsort and find a way home - he's still got a long way to go!

Title:	**ZOOL**
Publisher:	**Gremlin Graphics**
Price:	**£25.99**
Reviewer:	**Nic Bavington**

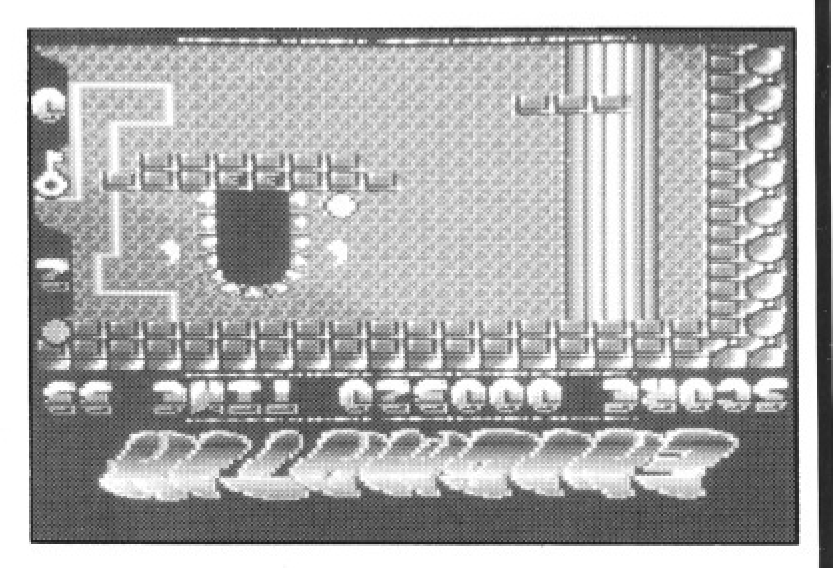
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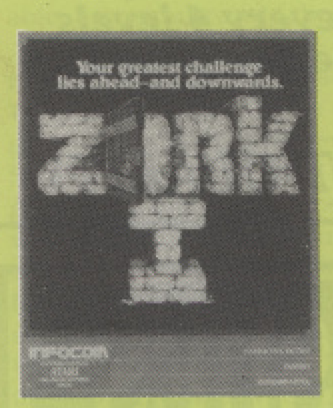
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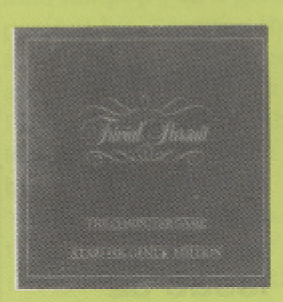
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